GIP CASEBOOK ON

INNOVATIVE GREEN FINANCIAL PRODUCTS AND INVESTMENTS

September 2023

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Preface

In recent years, green investment has gained significant traction, as the world grapples with the urgent need to address climate change and promote sustainable development. The global green bond market has grown from a nascent market to over 3 trillion USD to date, while 57 emerging economies have domestic issuance of green bonds totaling 444 billion USD (based on data collected by CBI).

However, despite the growing enthusiasm for green investments, certain challenges persist, creating demands and gaps in this evolving landscape. The majority of green financing currently takes the form of debt instruments, such as green bonds and loans, whereas the potential of equity investment has not been fully explored or exploited yet.

Furthermore, the focus of green investments has predominantly been on the energy sector, while other sectors that have a significant role to play in the decarbonization process, such as transportation, manufacturing, agriculture, and waste management, have not received enough attention from the financial sector. A more integrated approach is needed for the economy-wide transition and decarbonization.

This casebook seeks to address the aforementioned challenges and shed light on the various perspectives of green investment, with cases contributed by our members. It is developed with the objectives of the Working Group on Green Financial Product Innovation (WG3), co-chaired by Bank of China and Standard Chartered.

The first section of the casebook is on green industries, in line with the categorization of the China Green Bond Endorsed Project Catalog, while many of which were included in the IPSF Common Ground Taxonomy. The cases presented in this book were provided by GIP members and organized by sector, with the presumption that innovative finance can help solve the sector-wide financing challenges. The second section is on transition finance, focusing on four carbon-intensive sectors with exploratory attempts in financing their low-carbon transition, which are energy, construction and materials, agriculture, and steel. The third section includes some cases that fall into the broader ESG context, with cases on mitigating climate physical risks and promoting social development.

These cases represent a diverse range of perspectives, spanning different regions, sectors, and investment approaches. They offer practical insights into the complexities of green investment, illustrating both the successes and the challenges faced by various stakeholders. By showcasing these real-world examples, this casebook aims to inspire and inform our members in efforts to navigate the evolving green finance landscape.

We hope that this casebook serves as a valuable resource for anyone interested in understanding and advancing green investment practices and contributing to the collective efforts towards a sustainable and inclusive future.

Innovative Green Products

Clean Energy

Clean Production and Manufacturing

Green Building and Construction

Green Transportation

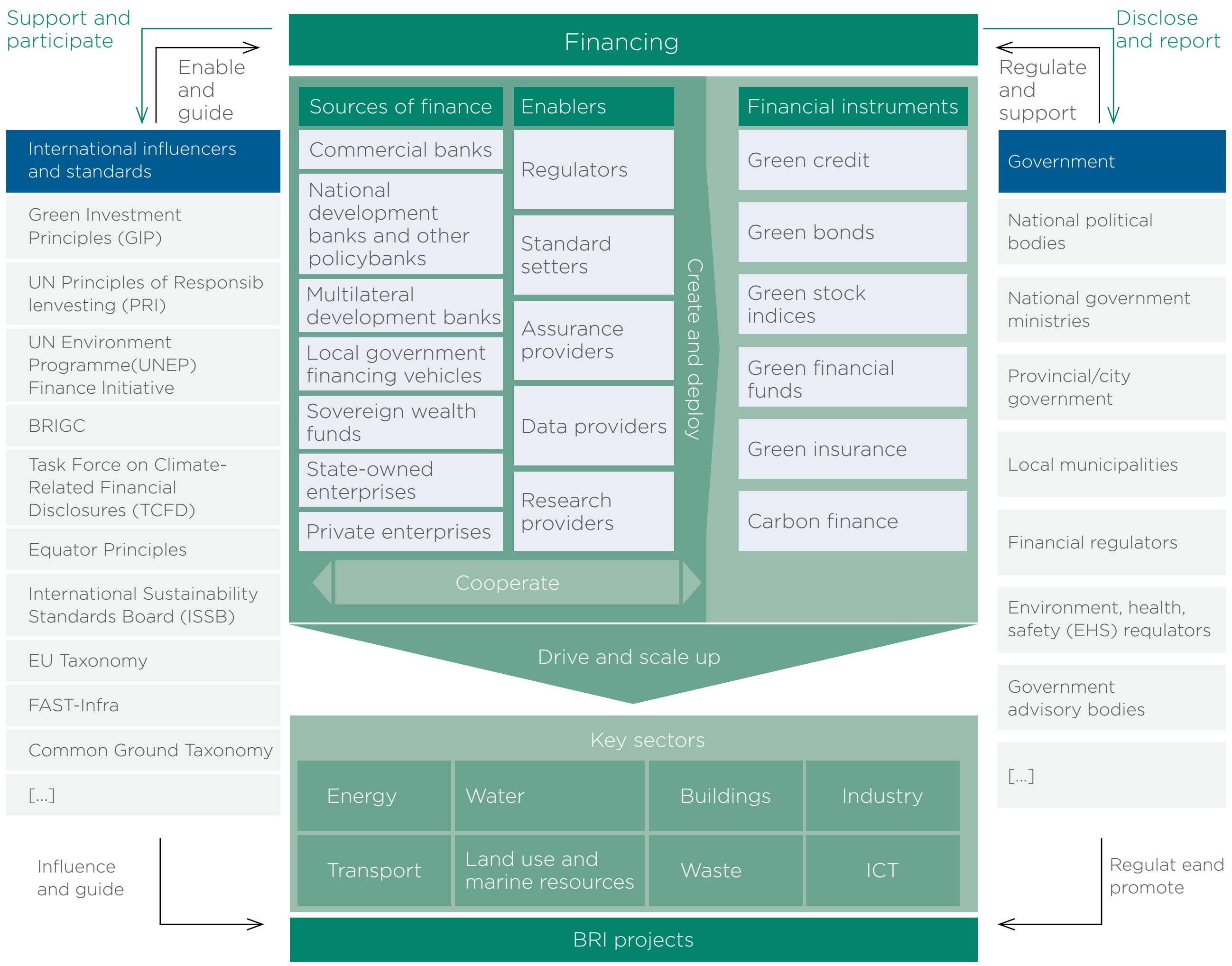
Waste Management

Nature-related Sectors

GIP Green Investment Principles

Financial institutions have a vital role to play in the low-carbon transition. They must manage transition risks as the use of fossil fuels declines over time, while at the same time developing innovative financing mechanisms and intermediary channels to support the build-out of low-carbon infrastructure.

According to a World Economic Forum report, "Advancing the Green Development of the Belt and Road Initiative", emerging and developing markets require annual investments of $400 billion in wind and solar power, $26 billion in battery storage, $300 billion in transmission and distribution, and $133 billion in EVs and EV chargers during 2026–2030[1]. Significant innovation is still needed to transform sustainable infrastructure into a mainstream asset class. To achieve those amounts of funding requirements, green financing products with innovative forms and functions are in demand. Green bonds, green credit asset-backed securities, green development funds and other new green financial products such as carbon finance, climate bond, climate insurance, and blue bonds are called for by Belt and Road countries and applied to different industry sectors[2].



Source: World Economic Forum and PwC China

[1]IEA, Financing Clean Energy Transitions in Emerging and Developing Economies, June 2021.
[2]World Economic Forum. Advancing the Green Development of the Belt and Road Initiative.

Clean Energy

The energy sector is a significant contributor to global carbon emissions, accounting for approximately two-thirds of all human-induced greenhouse gas emissions. The burning of fossil fuels, such as coal, oil, and natural gas, for electricity generation, transportation, and industrial processes releases carbon dioxide and other greenhouse gasses into the atmosphere, contributing to climate change.

According to Bloomberg New Energy Finance, global investment in clean energy has reached 1.1 trillion USD in 2022, tying with investment in fossil fuels for the first time, whereas getting the world on track for carbon neutrality by 2050 will require such investment to rise from current levels to around 4 trillion USD annually by 2030.[3] The financial sector is expected to play a larger role in the coming years, as commercial financial institutions are becoming the largest source of private financing for renewable energy worldwide, surpassing corporations and taking up 43% in 2020.[4] In terms of financial instruments, on top of balance sheet financing, external sources of financing for renewables usually include project-level debt and equity, as well as public financing instruments including grants and guarantees.

Despite developing countries hosted more than 70% of the world's population, they received only 15% of global investments in renewable energy in 2022[5]. This disparity can be attributed to various challenges in both the policy environment and capital markets. One challenge is the presence of fossil fuel subsidies, which undermine the price competitiveness of renewable energy despite the decreasing costs from a technical standpoint. According to the International Renewable Energy Agency (IRENA), fossil fuel subsidies doubled from 362 billion USD in 2020 to 697 billion USD in 2021 across 51 countries. Other factors contributing to the challenges may include uncertainties around timely implementation of government-led renewable energy planning or projects, as the pandemic has led to delays in electricity auctions in some economies[6].

Meanwhile, the cost of capital in emerging and developing economies is significantly higher compared to developed ones. This poses challenges for green projects seeking access to debt and equity markets. For example, the gap between nominal financing costs in developing countries and those in the United States and Europe can be as wide as 700 to 1,500 basis points – up to a factor of seven. Furthermore, domestic savings are unevenly distributed across regions and largely insufficient to adequately finance such projects, and foreign investors may be deterred from participating currency risks and restrictions on direct investment, especially in developing economies[7].

[3]https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/
[4]https://www.irena.org/Publications/2023/Feb/Global-landscape-of-renewable-energy-finance-2023
[5]Ibid
[6]https://www.iea.org/reports/renewable-energy-market-update/challenges-and-opportunities-beyond-2021
[7]https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-and-developing-economies/the-landscape-for-clean-energy-finance-in-emdes

Case 1
Standard Chartered Bank - Project Financing through Green Cross Currency Swap

1. Transaction Summary

Product Type: Green Loan & Green Cross-Currency Swap

Closing Date: March 2022

In October 2021, AGEL acquired SB Energy's 5 GW renewable asset portfolio, comprising 1.7 GW operational capacity and 3.3 GW under construction, which included the 450 MW Project being developed by SBE Renewables Ten Projects Private Limited ("Project Company" / "Borrower). The power generated by the Project will be sold to Solar Energy Corporation of India Limited ("SECI" / "Off-taker") under a fixed-tariff 25-year tenor power purchase agreement.

Standard Chartered Bank acted as the Mandated Lead Arranger and Bookrunner (MLAB), alongside six other international banks, in the successful closing of this project finance term loan.

2. Client Overview

The Borrower, a special purpose vehicle, was incorporated for undertaking the development of the Project and is wholly owned by AGEL.

AGEL stands as the flagship renewable energy arm of the India-based Adani Group, one of India's largest energy & infrastructure conglomerates with a strong track record of developing and operating infrastructure assets.

AGEL is one of the leading renewable players in Asia, with a proven track record of developing, building, owning, operating and maintaining utility-scale grid-connected solar and wind farm projects of 5.4 GW operational capacity, with an additional pipeline of 14.9 GW capacity under development.

Listed in 2018, AGEL today is a 39 billion USD market cap company with a pan-India portfolio of renewable assets spread across 70+ projects in 11 states with a diversified counterparty mix, of which 80% are sovereign counterparties including SECI, National Thermal Power Corporation and various State Discoms.

3. Deal Highlights

- Well-structured solution achieving client's objectives: This transaction was structured as a cash flow backed, secured and ring-fenced, construction finance facility ("Facility") to fund the development of a 450 MW solar-wind hybrid power project in Rajasthan, India ("Project") being developed by Adani Green Energy Limited ("AGEL" / "Sponsor"). The financing also incorporated contractual elements to facilitate a capital market takeout once the Project is operational such as go-to-market covenants and margin ratchet.
- Strategic importance for the Sponsor: This Facility plays a significant role in AGEL's overall capital management plan, aligning with its strategy to expedite the development of its under-construction asset portfolio. AGEL has set an ambitious target of achieving the target of 45 GW renewable energy capacity by 2030, pledged per Energy Compact Goals as part of COP26.
- Cross-sell opportunities: Given the Loan was structured as a Green Use of Proceeds Loan, Standard Chartered Bank was additionally able to help the client structure the Cross-Currency Swap (INR-USD) as a Green Derivative, marking a first of its kind in India.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 5 Utilizing green financial instruments

5. Analysis

The Green Loan entails significant contributions to SDG 7 (affordable and clean energy) and SDG 13 (climate action). This transaction provides funding for the development of a 450 MW solar-wind hybrid power project in Rajasthan, India. The funding supports AGEL's strategy to fast-track the development of its under-construction asset portfolio to achieve 45GW of renewable energy capacity by 2030, pledged per Energy Compact Goals as part of COP26 and represents 10% of India's 450GW countrywide renewable energy target. The project will contribute to delivering and replacing conventional energy sources with renewable energy instead, accelerating the energy transition.

The transaction was in line with the Bank's Green and Sustainable Product Framework and was structured in line with the Green Loan Principles (2021) established by LMA/APLMA/LSTA, incorporating leading practices from a sustainable finance perspective.

Case 2
Deutsche Bank - CGT-aligned Sustainable Trade Finance

1. Transaction Summary

Deal Size: **187** million RMB

Product Type: account receivable financing facility

Tenor: 3 years

Closing Date: July 2022

- The deal marks Deutsche Bank's first sustainable trade finance transaction aligned to the Common Ground Taxonomy (CGT).
- The Use of Proceeds is to finance Huaneng Leasing's direct leasing for the development of two wind power projects in China.
- It falls under Scenario 1 outlined in the CGT with clear overlaps between the EU and China green taxonomies that can be considered comparable within the scope of the CGT. The transaction also aligns to UN Sustainable Development Goals 7 and 9, which are related to Renewable Energy and Infrastructure development.
- The underlying wind farm projects have also been partially financed by senior debts from Asian Development Bank (ADB) under the multilateral institution's Green Financing Platform, following ADB's Environmental and Social Management System ("ESMS") requirements.

2. Client Overview

- Huaneng Leasing has been a long-standing client of Deutsche Bank China and is committed to providing comprehensive financial services that support clean energy development.
- With the vision of being a strong practitioner and leading performer in the industrial finance sector, Huaneng Leasing is devoted to the consistent innovation and development of a comprehensive financial service model for the clean energy industry. Riding on the trend of taxonomy harmonization between China and the EU, Huaneng Leasing continuously align their green finance practices with domestic and foreign green finance standards. Huaneng Leasing is also deeply involved in building the green leasing system, proactively participating in the leading green finance standards systems globally, and exploring opportunities in sustainable development and ESG. Together with partners such as Deutsche Bank, Huaneng Leasing will continue promoting the sustainable development of the clean energy industry by closely integrating industry expertise with innovative financial products.

3. Deal Highlights

- Upon completion, total green electricity capacity of the two wind power projects would reach 100 MW altogether, generating 270 million kWh green electricity per year which shall reduce over 0.226 million tons of CO2e. of greenhouse gas (GHG) per year.
- This transaction contributes to Deutsche Bank's Sustainable Finance target of 200 billion EUR until 2022. Deutsche Bank had committed to facilitate 200 billion EUR in sustainable financing and investment by the end of 2025 but has now become more ambitious, bringing the target forward to year-end 2022, after the bank already reached 157 billion EUR by the end of 2021.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 5 Utilizing green financial instruments

5. Analysis

International investors have been sensitive to differences in standards and approaches to green financing across global markets. They have sought greater clarity and a unified approach to facilitate their decision-making processes. In response to this need, the International Sustainable Finance Platform (IPSF) Taxonomy Working Group, co-chaired by the European Union (EU) and China, published the Common Ground Taxonomy (CGT) in November 2021 (first version). The CGT is a key milestone in providing clarity about the commonality and differences between the EU's and China's respective green taxonomies. It aims to enhance comparability among sustainable finance taxonomies and the definitions of green and/or sustainable activities on a global scale.

Case 3
Silk Road Fund - Convertible Green Bonds for Renewable Energy

1. Transaction Summary

Deal Size: **2,500** million RMB

Product Type: Convertible bonds and equity

Closing Date: April 2020

In 2019, Silk Road Fund took an equity stake in ACWA Power Renewable Energy Holding Ltd ("RenewCo" or "New Energy Platform") with Saudi International Power & Water Company (ACWA). This investment was made through a 2.5 billion RMB convertible bond. The transaction has been successfully completed, with the first phase of relevant assets injected and shares transferred. As a result, the Silk Road Fund now holds a 49% stake in the New Energy Platform.

The investment in RenewCo represents a combination of debt and equity. Silk Road Fund acts as both a creditor and equity investor through the RMB convertible bonds issued by New Energy Platform Company.

This project supports the development of the "Green Silk Road" and the Saudi Vision 2030 and provides support for the economic development of the project site, resulting in good social and environmental benefits.

2. Client Overview

ACWA Power, established in 2004, is a prominent power and desalination developer based in Saudi Arabia. It holds the position as the second largest power and water developer in the Gulf region. ACWA Power's operations extend across 12 countries, encompassing West Asia, North Africa, Southern Africa, and Southeast Asia. The company specializes in investing, developing, owning, and operating power and water projects in these regions.

ACWA Power adopts a business model where it acts as a lead developer on a build-own-operate (BOO) or build-own-operate-transfer (BOOT) basis. The company secures project bids by collaborating with strong strategic partners and emphasizing cost advantages in project development.

ACWA Power RenewCo is ACWA Power's renewable energy platform that currently owns a number of its existing renewable energy projects. The platform capitalizes on the rapidly growing potential for renewable energy in emerging markets and currently owns ACWA Power's concentrated solar power, photovoltaic solar, and wind assets across the United Arab Emirates, South Africa, Jordan, Egypt and Morocco, yielding an aggregate power capacity of 1668 MW.

3. Deal Highlights

Through the completion of this deal, Silk Road Fund has acquired a 49% shareholding in the New Energy Platform. ACWA Power's shareholding structure is intricate and not as easily attainable as that of its subsidiary. The collaboration between the two parties presents mutual benefits as the assets of the new energy subsidiary are primarily located in third-country markets outside Saudi Arabia. This cooperation enables ACWA Power to leverage the expertise of Chinese companies in developing markets along the Belt and Road, an area where China has demonstrated proficiency. Simultaneously, Silk Road Fund and related Chinese companies have the opportunity to gain insights into ACWA Power's unique investment and operational features. Additionally, this platform is well-suited for investment operations with reduced sensitivity.

The project serves as a link between the green Belt and Road Initiative and Saudi Vision 2030. By establishing the new energy platform, it effectively addresses common management challenges encountered in renewable energy projects, including issues related to fragmentation and mixed project types.

The project's noteworthy achievements have been recognized by prestigious awards. It received the 2020 Best Green Transaction Award from the GIP. Additionally, the project garnered the "Belt and Road" Best Project Award in the Middle East and Africa region, as recognized by Asiamoney.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

The new energy platform has delivered significant social and environmental benefits. The assets injected into the platform, along with the power generation capacity of the Dubai Solar Thermal Project, have the potential to provide electricity to over 1.06 million households across five countries: South Africa, Jordan, Egypt, Morocco, and the UAE. This provision of green energy serves as an effective support system for local socio-economic development in these regions.

Furthermore, when compared to the average emission standards of the local power structure, the assets injected into the new energy platform, combined with the Dubai Solar Thermal Project, can achieve an annual reduction of approximately 3.5 million tons of carbon dioxide emissions. Over the operation period of the project, this translates to a reduction of about 110 million tons of carbon dioxide emissions. These substantial emission reductions contribute significantly to environmental improvement and further the promotion and adoption of green energy throughout the region.

ACWA Power RenewCo is a renewable energy platform and owns several of ACWA Power renewable energy projects. Credit: ACWA Power.

Case 4
Standard Chartered Bank - The World's First CGT-aligned Green Syndicated Loan

1. Transaction Summary

Deal Size: **250** million USD

Product Type: Syndicated Green Loan

Closing Date: September 2022

In September 2022, Standard Chartered Group, as the exclusive appointed lead arranger, bookrunner and exclusive green loan coordinator, helped Trina Solar Limited ("Trina Solar") to settle a three-year 250 million USD green syndicated loan. The financing is also the first green syndicated loan in the world that meets the criteria of the China-EU Common Ground Taxonomy ("CGT"), and the loan funds will be used to support the production of D1.1 solar photovoltaic power and C2.4 solar power equipment under the CGT.

2. Client Overview

Trina Solar is a leading solar module manufacturer that produces its own ingots, wafers, cells and all solar modules based on a strong vertically integrated business model. The loan will be used to support Trina Solar's 500MW cell and module expansion project in the Eastern Region, which will for the first time utilize the highly efficient "Honey" cell process to increase cell conversion efficiency to achieve greater module power.

3. Deal Highlights

This loan is the first green syndicated loan in the world that complies with the CGT. With a large amount and long period, the loan can meet the long-term and large capital needs of large-scale energy projects, promote the growth of enterprise groups and economies of scale, and diversify and prevent loan risks.

In addition, the syndicated loan is composed of over a dozen banks from different countries, including China, Singapore, Australia, Luxembourg and Jordan. Within the loan, multiple currencies can be provided to facilitate borrowers' needs.

4. Adoption of GIP

Principle 4 Enhancing communication with stakeholders

Principle 5 Utilizing green financial instruments

Principle 7 Building capacity through collective action

5. Analysis

This loan serves as a model for the green industry in multiple ways. Firstly, it addresses the challenges faced by some Chinese enterprises in accessing green loans and funding from overseas investors. International guidelines place more demanding criteria on the qualifications of lenders or issuers. As a result, it is necessary to create systems or structures that follow consistent standards both within a country and internationally. Therefore, by leveraging the expertise of experienced global financial institutions, such as the ones involved in this loan, the Common Ground Taxonomy (CGT) can effectively cater to the financing needs of entities and support outstanding domestic enterprises in entering the international capital market. This, in turn, enables these enterprises to play a more prominent role on the global stage.

The CGT assumes a crucial role in bridging the Green Bond Endorsed Project Catalogue and the EU taxonomy. It facilitates the innovation of green financial products in China, establishes clearer standards for green financing for Chinese enterprises, and attracts greater participation from global capital in China's green finance market. Building upon the foundation of the CGT, there is potential to explore additional products such as green credit and green equity that align with international taxonomies. This will facilitate more effective inflow of international capital in various forms, further promoting the green transition and sustainable development of both the Chinese and global economies.

Clean Production and Manufacturing

The manufacturing sector plays a significant role in global climate actions, accounting for approximately one-fifth of carbon emissions and consuming 54% of the energy, as stated by the World Economic Forum.[8] Carbon emissions within the manufacturing sector primarily stem from energy consumption during production processes, transportation of materials and products, and the generation of waste. A McKinsey project in Africa highlights that if the manufacturing sector follows the growth trajectory of developed markets over the past few decades without incorporating decarbonization efforts, emissions are likely to double compared to their current levels. This scenario poses a significant threat to global climate action and sustainability goals.[9]

Amidst the increasing global focus on carbon neutrality, manufacturers in emerging economies may face challenges in maintaining competitiveness and accessing global markets if they do not transition towards low-carbon production procedures and processes.

Despite the pressing need to decarbonize the manufacturing sector, several challenges hinder the greening efforts. Internally, entities face a dilemma where they recognize the importance of sustainability and the benefits it brings, but they hesitate to commit capital towards these initiatives due to market volatility and economic uncertainty. The impact of the global pandemic and rising geopolitical tensions has intensified cash flow pressures, making sustainability investments less likely. Furthermore, investors exhibit reduced willingness to provide funding, whether through direct or indirect financing, due to perceived imbalances in risk and return.

Additionally, in-house capacity poses a challenge. Entities may lack the necessary expertise in sustainable manufacturing practices, as well as the knowledge of how financial instruments can be tailored to support their sustainability goals.

Externally, the absence or rapid changes in regulations for sustainable manufacturing, coupled with market uncertainties, present additional challenges for suppliers looking to take action. Without clear regulatory frameworks or demand signals from clients, companies lack the confidence to invest in and produce sustainable products and services.

This section highlights green transactions within the industry that demonstrate how financial instruments are assisting suppliers in meeting the increasingly stringent standards for green industrial products.

Case 5
Natixis - Financing Platform for Trafigura's Low Carbon Aluminum

1. Transaction Summary

Deal Size: **500** million USD

Product Type: "Low Carbon Aluminum" platform Loan

Closing Date: September 2020

- In September 2020 Trafigura Group, a market leader in the global commodities industry and one of the world's chief independent aluminum traders, established a "low carbon aluminum" financing platform of up to 500 million USD.
- Natixis acted as co-Green Coordinator.

2. Client Overview

- Founded in 1993, Trafigura is one of the largest physical commodities trading and logistics groups in the world. The Group offers crude oil, gasoline, fuel oil, biodiesel, condensates, concentrates, ores, refined metals, coal, and iron ore trading services.

3. Deal Highlights

- Aluminum is expected to be a major enabling material for the transition to a low carbon economy due to its low weight, high recyclability, and wide range of applications across diverse industries including transport, packaging and consumer goods, and building and construction.
- Numerous regulatory and voluntary initiatives have sought to improve the emissions and energy intensity of the aluminum production sector, but there is still no official market definition of 'low carbon aluminum'. Through this new financing, Trafigura has developed a methodology that sets out clear parameters for low carbon aluminum production, drawing on existing recommendations and standards such as those formulated by the EU Technical Expert Group on Sustainable Finance and the Aluminum Stewardship Initiative (ASI).

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 5 Utilizing green financial instruments

Principle 6 Adopting green supply chain management

5. Analysis

- **Innovation:** This facility represents a pioneering milestone for Trafigura and the broader market. It has been specifically developed to cater to the increasing demand from downstream manufacturers for low carbon aluminum and to assist upstream producers in accelerating their transition to low carbon technologies. Natixis and Rabobank have played a pivotal role in supporting Trafigura with the design and structuring of this groundbreaking financial instrument.
- **Problem addressed:** The establishment of this platform enables Trafigura to access financing at a preferential interest rate, which, in turn, allows the company to provide a premium to low carbon aluminum producers.

Case 6
Silk Road Fund - Green Equity Financing for Electric Bicycle Maker

1. Transaction Summary

- Deal size: **50** million EUR
- Product type: equity financing
- Closing date: July 2022

In early 2022, the consortium led by KKR initiated the privatization of the European e-bike group Accell, in which the Silk Road Fund invested 50 million EUR.

2. Client Overview

Accell Group is one of the largest manufacturers of electric bicycles and the second largest component manufacturer in Europe. Accell Group was founded in 1998 and is headquartered in Heerenveen, Netherlands. Its businesses include research & development, manufacture and sale of electric bicycles, conventional bicycles, freight bicycles and components. Prior to privatization, Accell was listed on Euronext Amsterdam.

3. Deal Highlights

- The Offer Price reflects a substantial premium of 26% over the closing price on January 21, 2022. It also represents a premium of 42% over the volume-weighted average price per Share in the last three months and a premium of 21% to Accell Group's all-time high closing price of EUR 48.00 per Share.
- The Consortium led by KKR is fully aligned with Accell Group's business ambitions and strategy. They share a commitment to launching new innovations for green mobility as part of the company's Environmental, Social, and Governance (ESG) goals.
- Electric bicycles and bicycles can contribute to low-carbon transportation. Green travel is also an important means to address climate change and achieve carbon neutrality. Investing in this project is highly aligned with the company's strategy which aims to build a green Silk Road in low-carbon transportation area, supporting the construction of a green "Belt and Road".

4. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 5** Utilizing green financial instruments
- **Principle 6** Adopting green supply chain management

5. Analysis

- **Problem addressed:** Accell Group's bicycle products and its commitment to a low-carbon and green vision are instrumental in promoting social carbon reduction and environmental protection. In comparison to fossil fuel vehicles, bicycle travel has minimal adverse environmental impacts, making it a sustainable mode of transportation. The European Commission recognizes the potential of bicycles as a green solution to address pressing issues such as climate change, air pollution, and traffic congestion. Promoting cycling is considered a crucial strategy for the European Union (EU) to achieve its ambitious target of reducing emissions in the transport sector by 90% by the year 2050.
- **Innovation:** Accell Group is committed to advancing its efforts in reducing carbon emissions by designing and manufacturing bicycles with minimal carbon footprints. The company has set an ambitious target to reduce its carbon footprint by 30% from 2018 levels by the year 2025. By focusing on sustainable production practices and implementing innovative technologies, Accell Group aims to minimize the environmental impact associated with its products. In addition, Accell Group is dedicated to sourcing renewable energy for its buildings. The company has committed to obtaining 60% of the energy consumed by all its buildings from renewable sources by 2025. Furthermore, Accell Group aims to achieve full reliance on renewable energy for its buildings by 2035. By 2025, the company aims to ensure that its export products and shipping packaging are free from single-use plastics derived from fossil-based sources. Additionally, Accell Group is committed to phasing out the use of single-use plastics throughout the organization.

Case 7
CACIB - Midea Group's Inaugural Green Bond

1. Transaction Summary

- Deal Size: **450** million USD
- Product Type: Green Bond
- Tenor: 5 years
- Closing Date: February 2020

- Proceeds are used to fund various green projects, including Midea's green design and green manufacturing, such as producing environmentally friendly and energy-efficient products, its low-carbon strategy, upgrading energy-saving of manufacturing equipment, green upgrading of energy infrastructure, and increasing renewable energy procurement.
- The second party opinion was provided by S&P Global Ratings, with a view that Midea's Green Financing Framework, published in February 2022, is aligned with the Green Bond Principles and Green Loan Principles 2021.
- Crédit Agricole CIB acted as a Joint Global Coordinator and Joint Green Structuring Advisor.

2. Client Overview

- Midea is the world's largest producer of major appliances with a mission to create surprisingly friendly solutions so you can enjoy life at home.
- Midea's environmental protection strategy seeks to echo China's carbon peaking and neutrality goals by integrating green concepts into its products' lifecycle (i.e. from design to recycling). For instance, the Company aims to leverage the Internet of Things (IoT) to enhance energy efficiency in its production processes and hence reduce electricity consumption per unit of product manufactured.
- The company's philosophy to "Bring Great Innovations to Life" means creating better lives through technology development. Midea aspires to position itself as a driver for technological innovation through developing low-carbon and energy-saving products that contribute to a sustainable relationship with the environment.

3. Deal Highlights

- The green bond is the first green financing tool that Midea adopted to support its green strategy, demonstrating Midea's commitment to corporate social responsibility and green development.
- This is also the first green bond issuance in the household appliance industry in China. It attracted a diverse set of investors from central banks, asset management companies, banks, and private banks from as wide as Asia, Europe, Africa, and the Middle East. It has also been warmly received by sustainable development investors with green and ESG investors accounting for about 20% of the bonds issued.
- This green bond issuance set a record of the lowest issuance margin for international U.S. dollar bonds with the same rating with similar levels of maturity across the industry.
- The issuer asserts compliance with the International Capital Market Association (ICMA) Green Bond Principles and the Framework has been confirmed as green by a third party independent second opinion expert review (S&P Global).

4. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 5** Utilizing green financial instruments
- **Principle 6** Adopting green supply chain management

5. Analysis

- **Innovation:** This transaction marks Midea's first green bond issuance and the first green bond issuance within the household appliance industry in China. The process involved careful benchmarking and reference to international taxonomies, as well as leveraging the expertise of advisors, to establish the eligibility criteria and environmental benefits of some less common project categories, including eco-efficient product design and development.

  Midea has developed a green financing framework to raise funds to support technological innovation and promote a low-carbon economy in line with its environmental protection strategy.

- **Problem addressed:** Midea has actively implemented national "Carbon Peak and Carbon Neutrality" strategic goals and pursued green development. It aims to enable green and low-carbon transformation of products through technological innovations and to realize energy conservation and emission reduction of manufacturing processes by upgrading equipment and lean production. The green bond is the first green financing tool that Midea adopted to support its green strategy, demonstrating Midea's commitment to corporate social responsibility and green development.

- **Lesson learnt:** Midea's green strategy was officially unveiled in October 2021. Based on the mission of "Building a Greener Global Supply Chain, providing Green Products and Services, and jointly building a Green Planet", the green strategy requires Midea to reach its target of peaking carbon emission by 2030 and achieving carbon neutrality by 2060, which will be achieved through six pillars of "green design, green procurement, green manufacturing, green logistics, green recycling, and green service". Midea intends to make significant contributions to the world's "Carbon Peak and Carbon Neutrality" goals.

Green Building and Construction

According to the United Nations Environment Programme (UNEP), the construction industry accounted for a significant portion of global energy consumption and carbon dioxide emissions in 2021, highlighting the urgent need for greening the sector. As urbanization continues to progress, carbon emissions in the construction industry are expected to rise. A recent UNEP report revealed that CO2 emissions from buildings and construction reached a new high in 2022, particularly in emerging economies where construction activities rebounded to pre-pandemic levels. Additionally, the increased use of fossil fuel gasses in buildings in these economies further contributes to emissions[10].

To achieve global climate goals, the greening of buildings is essential in the coming decades and presents significant business opportunities. According to the International Finance Corporation (IFC), the potential investment in green buildings in emerging markets alone amounts to 24.7 trillion USD by 2030. The development of the green building market not only brings financial benefits but also provides positive impacts for local residents, governments, businesses, investors, and financial institutions.[11]

However, the green construction market has yet to realize its full potential, particularly in developing countries, where it faces several challenges, particularly in terms of finance. One common challenge is the lack of market confidence due to the absence of demonstrative cases or concerns about higher risks associated with green buildings. Green buildings typically have higher upfront costs compared to conventional buildings, and the return on investment through energy savings or other benefits may take a longer time to recoup. These perceived risks are often compounded by concerns over technical expertise and regulatory barriers.

Another challenge is the limited availability of financing channels. Traditional financing products may not be well-suited to meet the needs of green building projects, which often require longer-term financing, specialized expertise, or greater flexibility in repayment terms. Moreover, smaller developers or projects may face difficulty accessing the market if they lack the same level of financial backing as larger, more established developers. In some developing countries, the provision of mortgages is limited, and high-interest rates, reaching as high as 32 percent.

This section will present cases of green construction.

[10] https://www.unep.org/resources/publication/2022-global-status-report-buildings-and-construction
[11] https://www.ifc.org/en/insights-reports/2019/green-buildings-report

Case 8
ICBC - Carbon Neutrality Bond to Support Green Construction

1. Transaction Summary

Deal Size: **500** million RMB

Product Type: Carbon neutrality bonds

Tenor: 3 years

Yield: 3.6%

Rating: AAA

On February 8, 2021, Sichuan Airport issued its first green building "carbon neutrality bond", which is the first batch of "carbon neutrality bonds" in the interbank market.

2. Client Overview

The Chengdu Tianfu International Airport project, developed by Sichuan Airport Group, has a circulation scale of 500 million RMB. The project has received the national three-star green building design label, highlighting its commitment to environmentally friendly practices. The project incorporates the concept of a sponge city design, and has implemented various green attributes, including the use of renewable energy sources, to achieve low-carbon, energy-saving, and sustainable development within the airport premises. These efforts result in significant carbon reduction benefits, with an annual reduction of 19,700 tons of carbon dioxide emissions, savings of 9,700 tons of standard coal, and a reduction of 5.32 tons of sulfur dioxide.

3. Deal Highlights

Chengdu Tianfu International Airport, which commenced operations on January 22, 2021, was constructed with a total investment of 10.1 billion RMB. It is situated in Lujia Town, Jianyang City, Chengdu, Sichuan Province, China. The airport boasts extensive facilities, including a terminal covering an area of 609,000 square meters, a comprehensive transportation center spanning 360,000 square meters, and associated infrastructure such as viaducts and facilities for cargo, air traffic control, aviation fuel, aviation food, municipal services, and comprehensive transportation hubs.

The construction of Chengdu Tianfu International Airport adhered to green building standards for the terminal, utilizing environmentally friendly materials, photovoltaic power generation, rainwater recycling, and other innovative technologies. This approach ensured that the airport aligns with sustainable development principles and fosters an environmentally friendly and low-carbon environment.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

- **Innovation:** The "carbon neutrality bonds" were issued with a total amount of 500 million RMB, featuring a maturity period of 3 years and a coupon rate of 3.60%. This issuance of the first batch of “carbon neutrality bonds” represents an innovative green debt financing instrument guided by the People's Bank of China. To meet the specific requirements for carbon neutrality bond issuance, the raised funds are designated for green projects that deliver carbon emission reduction benefits. Additionally, the issuance ensures clear disclosure of environmental benefits, particularly in terms of carbon emission reduction. This transparency ensures that the benefits derived from carbon emission reduction are “accountable, credible, and verifiable”.
- **Problem addressed:** Green features in this project include terminal construction, water supply and drainage systems, the utilization of renewable energy sources, pollution prevention and control measures, energy-saving lighting systems, and road greening initiatives. Based on evaluations conducted by professional institutions, the project's green initiatives will contribute to the reduction of 19,700 tons of carbon dioxide emissions, 5.32 tons of sulfur dioxide emissions, and 5.55 tons of nitrogen oxide emissions.
- **Lesson learnt:** The carbon neutral bond issuance for the Chengdu Tianfu International Airport project has had a positive impact on promoting social responsibility and sustainable development. It serves as a catalyst for encouraging more stakeholders to participate in carbon neutral initiatives, fostering a collective effort towards addressing climate change. The issuance of these bonds is of great significance in contributing to China's “Carbon Peak and Carbon Neutrality” goal. This not only provides additional financing channels for real estate enterprises but also helps to enhances international investors' confidence in financing green buildings in China. Meanwhile, it can make a demonstration to other developing countries where green infrastructure is needed.

Case 9
Ninety One - Supporting Affordable and Environmentally-Friendly Student Housing in Kenya

1. Transaction Overview

The Emerging Africa Infrastructure Fund (EAIF) is managed by and fully integrated into Ninety One's African investment platform. Ninety One manages the entire process on behalf of the EAIF.

Date closed: 2021

Total project investment: US$ 78.2m

Product involved:

- **Guarantee:** GuarantCo granted a partial credit guarantee of KES 2.5bn to support a KES 5bn note programme
- **Technical Assistance:** Provided $212k to support the sub-national loan note issue and $64k to cover legal advisory and exchange listing fees for the listing of the local currency green bond on the London and Nairobi Stock Exchanges.
- **Note:** EAIF anchored the note issue with the single largest investment of KES 1.3bn (US$ 12.6m equiv.).
- **REIT:** InfraCo Africa anchored the launch of Acorn Holdings' REITS transaction in February 2021 with a US$ 10m (KES equivalent) investment, further diversifying Acorn Holdings' funding.

2. Project Background

Kenya currently faces a chronic shortage of student accommodation as university enrollment in Kenya has grown from 27,000 students in 1990 to around 550,000 students today, whilst there are less than 40,000 beds available in the universities, creating a huge deficit.

Constraints in the local capital market limits avenues for the financing of infrastructure projects and investment alternatives for local institutional investors.

3. Project Highlights

-EAIF anchored the KES 4.3bn 5-year 'restricted public offer'.

-Partial credit guarantee issued to Acorn Holdings covers 50 percent of principal and interest due under their KES 5 billion note programme.

The resulting B1 rating by Moody's is above that of the sovereign and enhanced demand from investors.

4. Adoption of GIP principles

Principle 4 Enhancing communication with stakeholders

Principle 5 Utilizing green financial instruments

Principle 7 Building capacity through collective action

5. Analysis

The project marks a successful attempt of public-private partnership in emerging market, which not only fulfilled commercial objectives of public and private capital, but also demonstrated environmental and social impact for the community.

The project supported construction of green-certified student properties developed by Acorn, creating clean, safe, accessible and affordable accommodation for 22.7k students, among which 48% are anticipated to be women. The largest impact will be felt by first-time students or students currently living in worse conditions.

Acorn has developed solutions to ensure the safety and well-being of female students. This includes employing female housekeeping and security staff, having dedicated female floors and rooms, CCTV, improved lighting around the buildings and restricted access through biometric cards. Rooms have also been designed for prospective students with disabilities. Design features include lowered counter tops, beds and widened lifts and designated washrooms across communal areas.

The note programme is the first ever to achieve green certification in Kenya, which ensures the programme genuinely contributes to reducing carbon emissions. Climate risks are considered, with transition risks aligned with Paris Agreement and physical ones mitigated where possible.

At the time of this commitment, only one I-REIT has been established since 2015 in the country. The project demonstrated REITs offer a viable funding source for the affordable housing sector. It also Improved capital market efficiency through an increase in the number of REITs in the country that will be publicly listed, increasing overall flow of financing to eligible housing projects. Meanwhile, through the provision of technical assistance, the project also helped to develop capacity in local capital market.

Green Transportation

Transportation is a rapidly growing source of global emissions, accounting for approximately 20% of greenhouse gas emissions, second only to the power sector.[12]

The growing demand for connectivity and mobility necessitates investments in transport infrastructure. Sustainable transportation not only offers environmental benefits but also drives economic development and improves social welfare by providing access to employment, markets, social interaction, and education.

The OECD estimates that global investment needs for land transport infrastructure will reach 3 trillion USD by 2050.[13] The participation of the private sector is crucial, with private investments accounting for 61% of total investment in high-income countries and 44% in low-middle income countries.[14] According to the Climate Bonds Initiative, the transport sector was one of the top three sectors in terms of green bond issuance in 2021, alongside energy and construction sectors. Non-financial corporations played the most significant role, contributing 30% of the total capital.[15]

The transition to a low-carbon transportation system requires the development of effective public transport systems, streamlined urban planning, construction of railways, improved pedestrian and cycling safety, and the adoption of greener alternatives in private transportation, such as electric vehicles and the phase-out of fossil-fuel-based vehicles.

However, the current funding gap for sustainable transport arises from the high upfront costs associated with new infrastructure projects. Revenue from existing systems, which are often small-scale and underdeveloped, along with other funding sources, is insufficient to cover maintenance, operation expenses, and new investments. This gap is further exacerbated by implicit subsidies that encourage private car usage in some countries.

[12] https://www.statista.com/topics/7476/transportation-emissions-worldwide/#topicOverview
[13] https://www.oecd-ilibrary.org/environment/mobilising-private-investment-in-sustainable-transport_5k46hjm8jpmv-en
[14] https://www.mdpi.com/2071-1050/14/1/407
[15] https://www.climatebonds.net/market/data/

Case 10
Standard Chartered Bank - First Green Syndicated Invoice Financing for an EV Manufacturer

1. Transaction Summary

Deal Size: **350** million EUR

Product Type: Green Syndicated Invoice Finance

Green Purpose: Design and sales of electric, hydrogen, or hybrid vehicles aligned with EU taxonomy substantial contributing criteria for passenger vehicles

2. Client Overview

Polestar Performance AB ("Polestar") is a Swedish premium electric performance car maker and an affiliate to Volvo Cars and Geely Holding Group. It manufactures and exports 100% electric vehicles from Asia into Europe.

The trade finance facility underscores the lenders' support and commitment to Polestar's growth and evolution as a major electric vehicle (EV) player by supporting its working capital needs.

Polestar's strategic focus is to develop technologies to mitigate its environmental impact, from vehicle concept to materials and production techniques. It is focused on the goal of producing a truly carbon neutral car by 2030, including the development of new interior materials and structural components. The facility – a market first syndicated green invoice finance facility – finances the import of EVs into Europe and North America and aligns with both the lenders' and Polestar's sustainability objectives to introduce more sustainable practices across their ecosystems.

The facility also supports and upholds the broader United Nations Sustainable Development Goals to move towards sustainable development, net-zero emissions, and a green economy by providing financing to this segment.

3. Deal Highlights

Based on estimation from the European Environment Agency the average car in Europe emits 107.8 grams of CO2 per kilometer, this facility will support the switch to EVs with an estimated 30,000 new vehicles every year, resulting in an estimated annual saving of 1,700 kilograms of CO2 per kilometer.

4. Adoption of GIP

Principle 4 Enhancing communication with stakeholders

Principle 5 Utilizing green financial instruments

Principle 6 Adopting green supply chain management

5. Analysis

Due to the longer cycle of car sales/ in-stock, car makers face the challenge of longer repayment cycles, which affects their ability to shorten payment cycles for their suppliers. To address this issue and improve their working capital cycle, clients in the automotive industry require financing options. One such option is invoice finance, supported by a multilateral program and backed by Standard Chartered.

This financing solution allows the client to secure inventory by extending payment terms, providing greater certainty for forward orders placed with suppliers. By improving financial stability in the supply chain, this solution enhances working capital flow without the need for direct capital injection. Furthermore, this financing option creates immediate liquidity for recommended suppliers upon the acceptance of goods by the anchor.

Case 11
China Construction Bank - Green and Blue Dual Label Bond for Sustainable Shipping

1. Transaction Summary

- Deal Size: **500** million USD
- Product Type: Green and Blue Dual Label Bonds
- Tenor: 5 years
- Closing Date: July 2021

On July 21, 2021, CSSC (Hong Kong) Shipping Co., Ltd. ("CSSC Hong Kong") successfully priced and issued a 500 million USD green and blue dual-label bond with a coupon rate 2.10%, a tenor of 5 years, and debt rating “A-” for the S&P" "A" for Finch. CCB International acted as the global coordinator of the offering.

2. Client Overview

CSSC (Hong Kong) is the first shipyard leasing company in Greater China Region and one of the world's leading ship leasing companies, the company takes ship leasing as its major business, adheres to the strategic principle of combining industry and finance, serving the main business of shipbuilding, provides high-quality and all-round leasing services for top shipowners, traders and energy exploration and mining enterprises around the world, and promotes the improvement and innovation of domestic high-end ship and marine equipment manufacturing capabilities.

The company was listed on the Hong Kong Stock Exchange in 2019. CCB International has assisted the company in obtaining international ratings of "A-" by S&P and "A" by Fitch, and as the lead joint global coordinator assisted the company in successfully issuing its first overseas dual-term US dollar bond.

3. Deal Highlights

CSSC Capital 2015 Limited, a wholly-owned overseas SPV registered in the British Virgin Islands by CSSC, has issued the first Chinese-funded USD bond in the Greater China Region to obtain both green and blue certification. CSSC (Hong Kong) has provided an unconditional, irrevocable guarantee for this bond.

CCB International, as the joint global negotiator for the global issuance of the secondary issuance, provided comprehensive principal and banking services, including international rating assessment, project management, marketing and sales arrangements. On pricing day, CCB International's involvement helped attract significant market interest, with their own order of 180 million dollars further boosting confidence in the bond. The final price guidance was successfully narrowed by 40 basis points to T+145 basis points.

The bond offering by CSSC Capital 2015 Limited adheres to internationally recognized standards and frameworks, including the Green Bond Principles established by the International Capital Markets Association (ICMA) and the United Nations Sustainable Ocean Principles Green Financing Framework. It has also obtained certification as both a green and blue bond from the Hong Kong Quality Assurance Agency (HKQAA), an independent third-party certification institution.

The proceeds from the bond issuance will be utilized to finance or refinance qualified green projects in line with the defined criteria. These projects include energy efficiency upgrades, pollution prevention and control measures, adoption of low-carbon and clean fuels, and the development of sustainable transportation solutions. By directing the funds towards these initiatives, the bond aims to contribute to the advancement of green environmental protection and sustainable development within China's shipping industry.

4. Adoption of GIP

Principle 5 Utilizing green financial instruments.

Principle 6 Adopting green supply chain management

5. Analysis

In response to the objectives of achieving "Carbon Neutrality" by 2060 and "Carbon Emission Peak" by 2030, the company has recognized the significance of green bond projects and has actively pursued innovative financing models to support green and sustainable development. By expanding its financial business, the company has introduced new and unique financing models such as sustainable development loans, green bonds, and blue bonds. These initiatives have set a new industry benchmark and contributed to the advancement of environmentally friendly projects. This successful case can serve as an example for both large-scale and local state-owned enterprises operating in sectors such as airports, shipping ports, railways, highways, and their related major subsidiaries.

Case 12
China CITIC Bank[16] - Medium- and Long-Term Foreign Currency Syndicated Working Capital Loan for Power Battery Manufacturing

1. Basic Information

- Client name: A new energy technology company (referred to as company N)
- Client's industry: Power battery industry
- Product Type: Loan
- Tenor: 10 years

2. Client Background

Under the carbon peaking and carbon neutrality target, the EV industry is expanding rapidly, and the competition in the power battery industry as the midstream of the industrial chain is also becoming more and more intense. The strong demand from downstream has been transmitted to upstream, resulting in the rising price of raw materials.

As a leading global supplier of power battery systems, Company N has a huge demand for raw materials. To further acquire strategic resources and lock in lower costs, company N signed a strategic cooperation agreement with a leading domestic mining company. By signing a long-term purchase and sales contract, it locks in the supply of strategic metals for the next ten years, which also assumes a high prepayment.

Thus, it is urgent for Company N to consider how to use suitable financing solutions to pay for that advance payment, reduce the company's costs, and enhance comprehensive income.

3. Transaction Design

The essence of this transaction is an advance payment for raw materials under client's daily operation. But compared with the general advance payment in the territory, this advance payment has a long term and a large amount, while payment is in USD. After careful due diligence on the transaction, China CITIC Bank looked closely at the transaction structure, trading price and quantity, while analyzing the feasibility of prepayment and various foreign exchange management policies, and ultimately provided Company N with a prepayment financing solution by leading the formation of a domestic medium-and long-term US dollar syndicate working capital loan.

[16] The case is recommended by World Economic Forum as CITIC Group is a global partner of the forum.

Advantages of the program: Domestic borrower of USD does not need to register for foreign debt, which improves business efficiency and avoids the additional cost of foreign exchange; the medium-to long-term working capital loan matches the duration of the contract; the syndicated loan guarantees a larger financing amount.

Key process: After the program was finalized, China CITIC Bank actively communicated with regulators to prevent operational risks under the premise of ensuring business compliance; it also leveraged the synergistic advantages of the Group to work closely with the listing sponsor brokerage firms of Company N. The project team combined the experience of several syndication exercises in the early stage and invited a number of banks, covering all types of mainstream banks. China CITIC Bank's headquarters and branch offices worked closely together and assisted the participating banks in accelerating the approval process.

4. Deal Highlights

Satisfying clients' capital needs: Ten-year syndicated loan tailor-made to accurately match the term of the raw material supply contract, solving worries and ensuring stable supply of raw materials.

Effective control of financing costs: The medium- and long-term syndicated loan program bundled interest and fees together to provide a competitive offer compared with the issuance of USD-denoted bonds, while the client can withdraw funds more flexibly and conveniently.

Convenient account usage: Company N will use CITIC Bank's account system to complete the prepayment for the contract and the payment for goods in the next ten years, building on CITIC Bank's professional advantages in the international market and obtaining convenient cross-border account management and foreign exchange services.

Broadening of financing channels: The project helps accelerate the internationalization of Company N, familiarize clients with related products and services, and further broaden financing channels, which will contribute to the long-term development of the company.

5. Project Highlights

The project fully meets the needs of Company N, including matching the contract term, agreeable capital scale, saving exchange cost, etc. It reduces the comprehensive cost of the client, enhances its knowledge of financial products and services, and solves the problem of raw material cost.

The ten-year tenor of this syndicated working capital loan and the design of centralized repayment in the last three years are a major breakthrough not only within the CITIC Bank but also among financial institutions in China.

The project took only 18 working days from project creation to approval; the syndication was completed within 22 working days and the placement was successfully completed within one week. It is a model for CITIC Bank to continuously improve its comprehensive service to accommodate the financial needs of the new energy sector.

Waste Management

It is estimated that the global generation of municipal solid waste reaches 2.01 billion tons annually, with at least 33 % not being managed in an environmentally safe manner. As the demand for materials continues to rise, annual waste volume is projected to exceed 3.40 billion tons by 2050, more than doubling the predicted population growth during the same period. According to the World Bank, the sector is responsible for approximately 5% of global greenhouse gas emissions, primarily due to methane released from landfills and incineration.[17]

Financing solid waste management systems poses significant challenges, including the lack of cost recovery mechanisms, limited access to capital markets, and low prioritization of waste management by policymakers. In high-income countries, the operating costs for integrated waste management, covering collection, transport, treatment, and disposal, can be as high as 100 USD per ton. In lower-income countries, the costs are around 35 USD per ton and are more difficult to recover.[18] User fees, charged on a fixed or variable basis depending on the user type, are equally shared between local governments and the private sector. The remaining costs, including waste system investments, are typically funded through national government subsidies and private sector participation.

To address these challenges, the sector must adopt sustainable and integrated approaches that focus on waste reduction, resource recovery, and the promotion of a circular economy. The transition to a circular economy is not only estimated to offer a 4.5 trillion USD economic opportunity but also serves as a catalyst for innovation and job creation.[19] New business models should be centered around reuse, repair, and remanufacturing.

This section presents cases of enhanced recycling and waste to energy power plants.

[17] https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html
[18] Ibid
[19] https://newsroom.accenture.com/news/the-circular-economy-could-unlock-4-5-trillion-of-economic-growth-finds-new-book-by-accenture.htm

Case 13
TDBM - Financing Enhancement of Recycling Facilities for Local Plastic Manufacturer Through Green Loan

1. Transaction Summary

Deal Size: **1.6** million USD

Product Type: Green Business Loan

Tenor: 5 years

Closing Date: November 2026

Client request: The company had requested TDBM' s Green Business Loan to purchase equipment for PET plastic waste recycling.

Description of facility and use of proceeds or KPIs: TDBM's "Green Business Loan" product was launched in August 2021 within the framework of TDBM's Green Loan Program (GLP), which aims to achieve sustainable development and green growth in Mongolia by enabling access to longer-term green loan offerings to Mongolian corporates, SMEs and retail clients. The Bank's new Green Business Loan product facilitates financing of green projects and activities of enterprises operating their business in an environmentally-friendly way according to green categories described in the Mongolia Green Taxonomy and TDBM's Sustainability Framework.

Framework adoption: Article 6.2.2. Waste collection, sorting and material recovery, re-use, and recycling facilities of Green Taxonomy of Mongolia and TDBM's Sustainable Framework's Article 5. Sustainable water and waste use and treatment.

Verification: TDBM is the first organization to commission an SPO on its Sustainability Framework in compliance with the Green Bond Principles, the Social Bond Principles, and the Sustainable Development Bond Guidelines. SPO was provided by Vigeo Eiris, a subsidiary of Moody's Investors Services. The Bank's Sustainability Framework received a rating of "Robust".

The institution's role in transaction: TDBM had issued Green Business Loan to the company by calculating the GHG emission reduction and plastic waste reduction with its applicable ER Tool and concluded the client's activity is qualified for the green loan requirement.

2. Client Overview

The company specializes in the production of plastic tube bottles and is dedicated to contributing to Mongolia's social and economic development. With a focus on advanced technology and high-quality standards, the company aims to promote sustainability in the marketplace and integrate purpose into its business strategy and brands. The company can produce 600,000-800,000 PET tube bottles. These tube bottles are applied to contain many popular beverages such as fresh water, juices, and a plethora of different carbonated drinks. The bottles described are manufactured daily with fully automatic Sidel brand equipment within an area of 4000 m2 in Ulaanbaatar.

3. Deal Highlights

More details on transaction structure (e.g. KPIs chosen, margin ratchet)

To identify potential clients for the green loan criteria, TDBM requests a green business loan assessment sheet, which contains company's loan purpose and necessary parameters to calculate GHG emission reduction. The Bank's Green Funding Office determines whether the company is qualified for Green Business Loan, based on these parameters. As for this company, the loan request qualified TDBM's Sustainability Framework's Article 5 of Sustainable water and waste management, which requires to increase plastic waste recycling by at least 20%.

How this transaction is aligned with client's sustainability plan:

The provision of the green loan has benefited the company in increasing their capacity to recycle and upgrade equipment for PET technology, which will contribute to a decrease of plastic waste in Mongolia.

4. Adoption of GIP

Principle 1	Embedding sustainability into corporate governance
Principle 4	Enhancing communication with stakeholders
Principle 6	Adopting green supply chain management

5. Analysis

Challenges & barriers addressed: Recognizing the growing demand for plastic bottle recycling, the Client, as the sole PET plastic bottle recycling factory in Mongolia, plans to expand its operations. The goal is to not only meet the increased demand but also to contribute to the growth of the waste recycling market in Mongolia. To achieve this, the Client intends to introduce additional specialized PET recycling equipment to the market.

Lessons to be learnt: Plastic recycling plays a crucial role in addressing plastic pollution and conserving resources. By diverting plastics from landfills and promoting their reuse, recycling contributes to the elimination of plastic pollution. This case highlights the feasibility of quantifying greenhouse gas (GHG) emissions reductions achieved through PET plastic waste recycling projects. This knowledge enables the issuance of green business loans to support companies involved in sustainable recycling practices.

Case 14
Societe Generale - Waste-to-Energy Plant in Vietnam

1. Transaction Summary

Deal Size: **195** million USD

Product Type: Export financing

Tenor: 10-year

Closing Date: December 2020

Société Générale acted as Senior Lender in the 195 million USD Sinosure covered 10-year export financing for China T company waste-to-energy project in Vietnam. It'll be the largest WtE project in Vietnam and the second largest in the world. The transaction represents:

- The first overseas waste-to-energy project combined sustainability and Chinese support from Sinosure in the markets (GIP Principles 1,4, 5,7)
- The new evolution of foreign investments in Private Sector alongside BRI by offering remarkable long-term debts (GIP Principles 4, 5)
- The changing geographic investments of sustainability projects alongside BRI after signing of RCEP last Nov. The project also proceeded in Hanoi, the same place where RCEP was signed. (GIP Principles 4, 7)
- The Equator Principles (EPs), IFC performance standards strictly employed in the ESG risk assessment process conducted by independent party throughout the project life cycle (GIP Principles 1,2,3,4,6)
- The urgency of reaching a common ground China-EU taxonomy (GIP Principles 4,7)

2. Deal Highlights

In December 2020, Société Générale successfully closed, as Senior Lender along with other Chinese and foreign banks, the financing of a WtE project in Hanoi, Vietnam, that is being built by China First M Group and T Equipment, for a total of 195 million USD.

The waste-to-energy project is financed through a 10-year Sinosure Covered Facility whereby China Export & Credit Insurance Corporation (Sinosure), is providing a 95% comprehensive cover under its Long Term Export Credit Insurance to the company S, based in Hanoi, Vietnam. China T company, its Spanish Affiliate and Europe T. Company, all entities of the China T group (and owners of the Borrower), are also providing support through comprehensive first demand Corporate Guarantees.

Five incinerators will be serviced by the Borrower for a 49-year period scheduled to start in September 2021 under a Municipal Solid Waste Service Management Agreement with Hanoi's People Committee, which will be operated by its Spanish Affiliate.

3. Environmental benefits or impact

This project with a total investment of over 320 million USD and an installed capacity of 75 MW, When completed, it will be the largest WtE project in Vietnam and the second largest in the world. The project makes the most use of GIP principles to bring in environmental benefits and impact.

- 1)The project will incinerate at least 4,000 tons per day of household waste with an annual disposal of 1.76 million tons.
- 2)The project addressed a new changing geographic investment of sustainability projects in Southeast Asia alongside BRI. The Regional Comprehensive Economic Partnership (RCEP) was finally signed in November 2020. On December 3rd, a Member of the Political Bureau of the Central Committee of the Communist Party of Vietnam and Party Secretary of Hanoi, visited China T's WtE project and acknowledged the construction process of the project.
- 3)It demonstrates the new evolution of foreign investments in Private Sector alongside BRI by offering remarkable long-term debts.
- 4)This waste-to-energy facility will allow Hanoi to manage a significant share of the municipal solid waste treatment which used to be disposed of in landfill.

All in all, it will support Hanoi's urban development in a sustainable way but also improve human living conditions and reduce wastewater and gas pollution and improve residents' physical health.

Covering an area of 17. 5 hectares, the Soc Son Waste-to-energy Power Plant is a major infrasctructure project with a total investment of 350 million USD and an operation period of 49 years. It uses advanced European waste processing tecnologies that are in line with environmental protection standards of Vietnam. As the words second largest one-time Waste-to-Energy project, it can deal with 4000 tons of municipal solid waste(MSW) per day, with a capacity of 75MW in power generation. When it's put into operation, the plant can handle 55% of MSW generated in Hanoi efficiently and long into the future. The construction started in August 2019 and is planned to be put into pilot run at the end of 2021

(Source: Ha Noi Thien Y Environmental Energy Joint Stock Company[20])

[20]https://vnty.com.vn/?lang=en

4. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 2** Understanding Environmental, Social and Governance Risks
- **Principle 4** Enhancing communication with stakeholders
- **Principle 5** Utilizing green financial instruments
- **Principle 6** Adopting green supply chain management
- **Principle 7** Building capacity through collective action

5. Analysis

According to the risk appetite of foreign investors, it's highly difficult to offer long-term debt on the balance sheet to Chinese clients in the private sector alongside BRI. However, Société Générale make it happen by adoption of GIP principles:

- 1)Align with GIP Principles 1, 4, 5, 7: It is the first non-shipping transaction Sinosure Covered loan in recent years, which successfully combines sustainability and Chinese support from Sinosure and leverages Société Générale's global client coverage in the EU (Note: The operator of this project is Société Générale's client in the EU)
- 2)Align with GIP Principles 1, 5, 7: This transaction has shown a strong cooperation within Chinese banks and foreign banks in China to provide the client with a tailored solution. By structuring the deal covered by Sinosure and Corporate Guarantees provided by European clients, the LGD is far lower than the defaulted LGD alongside BRI countries, the cost of funding significantly lower than vanilla financing and help client control project costs
- 3)Align with GIP principles 2, 4, 5, 6: The supply chain environmental and social risks/ benefits are assessed by independent party ERM throughout due diligence, operational phases , closely monitored in the due course and reviewed action plans mitigation every three months. The strict process will also help clients International Finance Corporation (IFC) Performance Standards and Guidance Notes clearly addressed in the evaluation process in terms of IFC(PS), Guidance Note, Handbook and Good Practice Note etc., and International labour convention have been considered in developing the project

Based on Société Générale's observation on the process of closing this project, reaching a common ground China-EU taxonomy is ever more urgent to conduct the sustainable investments in certain BRI countries. Currently, the two sides have different views on the waste to energy field. Having a common ground taxonomy, will be possible to diversify financial instruments to attract the international investors, i.e. the rating advisory, the bond issuances, and further lower the funding cost of investments alongside BRI i.e. there'll be additional subsidy offered by financial institutions' parent group once the project was acknowledged as positive impact finance.

Nature-related Sectors

Biodiversity

Biodiversity is essential for supporting the livelihoods of communities and the overall economy. Research from the World Economic Forum shows that 44 trillion USD of global GDP—around half—is highly or moderately dependent on nature.[21] However, the United Nations' Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has warned that humans are depleting nature at a faster rate than it can replenish itself.[22]

There exists a large gap between the current spending on biodiversity conservation and the required amount. As of 2019, current spending on biodiversity conservation is between 124 and 143 billion USD per year, while the estimated total need ranges from 722 and 967 billion USD per year. This leaves a financing gap of approximately 598 billion and 824 billion USD per year.[23] UNEP's analysis identifies a 4.1 trillion USD financing gap for nature by 2050.[24] Investments in nature-based solutions will need to at least triple by 2030 and increase four-fold by 2050 compared to the current level.

[21] https://www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report/
[22] https://www.nature.org/en-us/what-we-do/our-insights/perspectives/closing-nature-funding-gap-global-biodiversity-finance/
[23] Ibid
[24] https://www.unepfi.org/themes/ecosystems/one-small-step-for-finance-one-giant-leap-for-nature/#:~:text=There%20is%20an%20estimated%20USD,at%20least%20triple%20by%202030.

Case 15
Bank of China - The First Biodiversity-themed Green Bond from a Global Financial Institution

1. Transaction Summary

- Deal Size: **1.8** billion RMB
- Product Type: bond
- Tenor: 2 years
- Closing Date: Sept 2021

On 29 September 2021, Bank of China successfully issued the first biodiversity-themed green bond of 1.8 billion RMB, including RMB and MOP, with a maturity of 2 years and an amount of 1 billion MOP respectively.

2. Client Overview

The net proceeds will be used to finance six eligible projects related to biodiversity conservation in China. These projects include: an ecological construction demonstration project in Central China with a loan amount of 400 million RMB, an ecological restoration project in the mountainous region of Northern China with a loan amount of 740 million RMB, an ecological water network project in Central China with a loan amount of 194.45 million RMB, a national forest reserve project in Southwestern China with a loan amount of 350 million RMB, a national forest reserve project in Central China with a loan amount of 156 million RMB, and a low-quality and low-efficiency forest renovation project in Eastern China with a loan amount of 150 million RMB.

3. Deal Highlights

The funds raised by the biodiversity-themed green bonds correspond to a number of projects with biodiversity conservation benefits, such as ecological construction demonstration in domestic regions, ecological restoration in mountainous areas, ecological water network, national reserve forest, and transformation of low-quality and low-efficiency forests.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

The funds raised from the biodiversity-themed green bonds are used to support biodiversity conservation projects. According to the relevant definitions of the United Nations Convention on Biological Diversity, the China Biodiversity Conservation Strategy and Action Plan (2011-2030) and the guidelines for the disclosure of environmental indicators of biodiversity projects in the Green Bond Principles of the International Capital Market Association, projects that meet the requirements of biodiversity mainly include ecological protection of land, rivers or oceans for the purpose of protecting biodiversity, protection of biological habitats, construction of nature reserves, afforestation and reforestation, sustainable forestry, agriculture and fishery development, etc.

Case 16
Swiss Re and CPPIC - Preserving Wetlands with the First Gross Ecosystem Product (GEP) Insurance in China

1. Transaction Summary

- Deal Size: over **2** million RMB
- Product Type: Insurance
- Tenor: 1-year
- Closing Date: April 2022

2. Client Overview

Known as the "kidney of earth", wetlands not only provide abundant staple food, clean water and other rich natural resources that millions of people depend on, but also play an indispensable role in capturing and sequestering carbon and restoring biodiversity and ecosystem services. After 30 years of signing Ramsar Convention on Wetlands, China brought its first national Wetland Protection Law into effect in 2022.

The Hangzhou Bay Wetland Park, located on the east coastline of China, covers an area of 63.8 Km2. It boasts a rich diversity of plant species and abundant benthos, attracting more than 220 bird species, including many endangered and rare species. The wetland park holds immense value for ecological protection, wetland tourism, scientific research, and environmental education. However, the flora and fauna within the conservation area face significant threats from increasingly frequent and severe climate-related disasters, such as typhoons and droughts.

To align with the central government's policy proposition on ecological conservation, Ningbo Wetland Protection Authority, the main administerial agency of the Hangzhou Bay Wetland Park, seek to leverage risk management expertise and financial resources from private sector to realize the value of ecosystem services from the wetland, build up the wetland's resilience against natural catastrophe and facilitate maintenance and operation of the wetland park in a sustainable way.

Under the supervision of Ningbo Municipal Government (including the Ecological and Environmental Bureau, Financial Supervisory Authority and Banking and Insurance Regulatory Commission), Swiss Re and China Pacific Property Insurance Company (CPPIC) jointly developed the GEP Insurance solution for Ningbo Wetland Protection Authority. Launched in April 2022, the GEP insurance project is a one-year agro-solution deal. This insurance product adopts the parametric method to protect the GEP values of Hangzhou Bay National Wetland Park against typhoon and drought risk. The Designated Operational Entity (DOE) calculated the GEP value accounted for by carbon sink and wetland maintenance and restoration cost, thereby determining the sum insured (more than 2 million RMB) of the product.

Thanks to the GEP insurance, Ningbo Wetland Protection Authority is eligible to apply for a loan from the bank, which helps to mobilize more financial resources to expand infrastructure for eco-tourism and natural restoration of the wetland park.

3. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 2** Understanding Environmental, Social and Governance Risks
- **Principle 4** Enhancing communication with stakeholders
- **Principle 5** Utilizing green financial instruments
- **Principle 7** Building capacity through collective action

4. Analysis

As champions for green transformation in the insurance industry of China, both Swiss Re and CPPIC are signatories of the GIP. The success of the GEP insurance project ascribes to the two institutions' knowledge on risk management, collaboration, and common vision to turn sustainable commitments into concrete actions. In detail, Swiss Re combined the ecosystem value and insurance product and developed the parametric solutions with its featured Agriculture Insurance Risk Management Platform (AIRMP), which facilitates claims management by real-time and transparent weather data. Based on the information generated by AIRMP, CPPIC takes the responsibility of developing and reviewing the tailor-made insurance policy for the Ningbo Wetland Protection Authority, providing professional suggestions on natural asset valuation, collaborating the bank to increase the line of credit limit for the wetland park, and promoting the investment in ecological conservation. In addition, the institutionalized long-term collaboration mechanism (CPPIC/ Swiss Re Agro Virtual Joint Venture business model) has set up a concrete foundation for the two companies to explore emerging business opportunities for mutual benefit.

As the 1st GEP insurance scheme in China, it helped to quantify and monetize the value of nature capital of the Hangzhou Bay Wetland, guarantee continuous financial support to reverse nature loss while addressing lenders concerns over the natural catastrophe's impact on the wetland, and repurpose financial resources to climate mitigation.

The project has received extensive attention from the whole insurance industry and positive feedback from the central and local governments. Hongqiang Jiang from the Chinese Academy of Environmental Planning, Ministry of Ecology and Environment spoke highly of the 'GEP-oriented wetland insurance scheme' and regarded it as "a pioneering, leading and practical initiative to support marketization operation, investment and financing for ecological products". Likewise, Ningbo government stated that "this initiative demonstrates a new model of green finance with joint collaborations from insurance and banking to fulfill China's ambition to peak carbon emissions by 2030 and reach carbon neutrality by 2060".

Fishery

Case 17
Mizuho Bank - Sustainability-linked Ninja Loan

1. Transaction Summary

Deal Size: **400** million USD

Product Type: Sustainability-linked Loan (one of the KPIs addressing Seafood Sustainability)

Tenor: 5 years

Closing Date: February 2021

Overview:

- Inaugural sustainability-linked syndicated loan for Thai Union Group PCL (Thai Union), the world's biggest canned tuna producer.
- The loan comprises a 6.5 billion THB credit facility denominated in both baht and USD and a 183 million USD-equivalent Ninja loan facility denominated in both JPY and USD. Together, the two credit facilities are equivalent to 12 billion THB (400 million USD), with a term of five years.
- If the company achieves set targets such as strengthening the traceability of its seafood, the interest rate will be lowered.
- Mizuho Bank, a leading bank in Japan, is one of the MLAB, and sustainability coordinators.

KPI:

- maintaining the Company's consistently high rankings in the S&P Global Dow Jones Sustainability Indices (DJSI)
- Achieving the Company's Greenhouse Gas (GHG) emissions intensity targets
- Increasing oversight in Thai Union's international supply chains through an increase in the use of electronic monitoring (EM) and/or human observers on-board tuna vessels

- Framework: Sustainability-Linked Loan Principles (SLLP) 2021
- SPO verifier: Sustainalytics
- Role: MLAB, Sustainability Coordinator

2. Client Overview

- Headquartered in Thailand, Thai Union is one of the world's largest seafood producers, leading the market in canned tuna and also dealing in ambient seafood, frozen and chilled seafood, pet care products, and value-added products, among others.
- Thai Union is recognized as an industry leader in sustainability with its global sustainability strategy SeaChange®. Thai Union is committed to driving meaningful change across the industry, including protecting marine resources and human rights.

3. Deal Highlights

- Debut Sustainability-linked and Ninja loan for the client.
- The loan was oversubscribed by a factor of more than two times the initial facility size when first launched to the markets. The initial size was 5 billion THB piece and a 125 million USD-equivalent Ninja tranche. However, the greenshoe option was exercised, and the size increased to 6.5 billion THB piece and a 183 million USD-equivalent Ninja tranche.
- The loan represents "Blue Finance" to help solve illegal, unreported and unregulated (IUU) fishing. IUU fishing poses a major threat to the sustainability of marine resources, the diversity of marine ecosystems, and the protection of labour rights. Addressing IUU fishing is part of the UN's Sustainable Development Goal 14, Life Below Water. By enhancing the traceability of sourcing throughout the supply chain, Thai Union seeks to play a role in eliminating IUU fishing.

4. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 2** Understanding Environmental, Social and Governance Risks
- **Principle 3** Disclosing environmental information
- **Principle 5** Utilizing green financial instruments
- **Principle 6** Adopting green supply chain management
- **Principle 7** Building capacity through collective action

5. Analysis

- In addition to its strong intention to contribute towards the sustainability of marine resources, Thai Union needed to publicize its ESG efforts from commercial perspectives as well. Thai Union makes about 70% of its overall revenue in the U.S. and Europe, where awareness of ESG factor is strong among retailers and consumers. Hence, the need for ESG finance arose from both ESG and commercial reasons.

  Sustainable loan label attracted some investors who normally prefer investing into longer term bonds and other investment opportunities. Given the limited sustainable finance opportunities in the market back in early 2021, and as they needed to grow their ESG finance portfolio, this sustainable loan was the attractive opportunity for them.

  The deal also had a Ninja loan piece. Ninja loans are corporate syndicated loans extended from Japanese banks to non-Japanese or offshore entities and sold mainly to Japanese investors. Japanese regional banks have relatively higher appetites for Ninja loans, because:

- Ninja loans provide them an opportunity to invest outside of Japan which is not very common for them. Ninja loans enable regional banks to diversify their portfolio and invest in loans with relatively high margins compared to domestic loans.
- As it is common to have a JPY denominated portion in Ninja loans, it supports smaller regional banks to invest into the JPY portion with their lower JPY funding cost compared to the foreign currency funding.
- The fact that one of the largest banks in Japan being MLAB gives additional comfort for those participating banks to take the credit risk, and led to the successful syndication.
- The successful syndication led to the following sustainable Ninja loan later the year with A- rating (Foreign Currency Long term issuer rating) from the Japan Credit Rating Agency.

Transition Finance

Energy

Construction and Materials

Agriculture

Steel

GIP Green Investment Principles

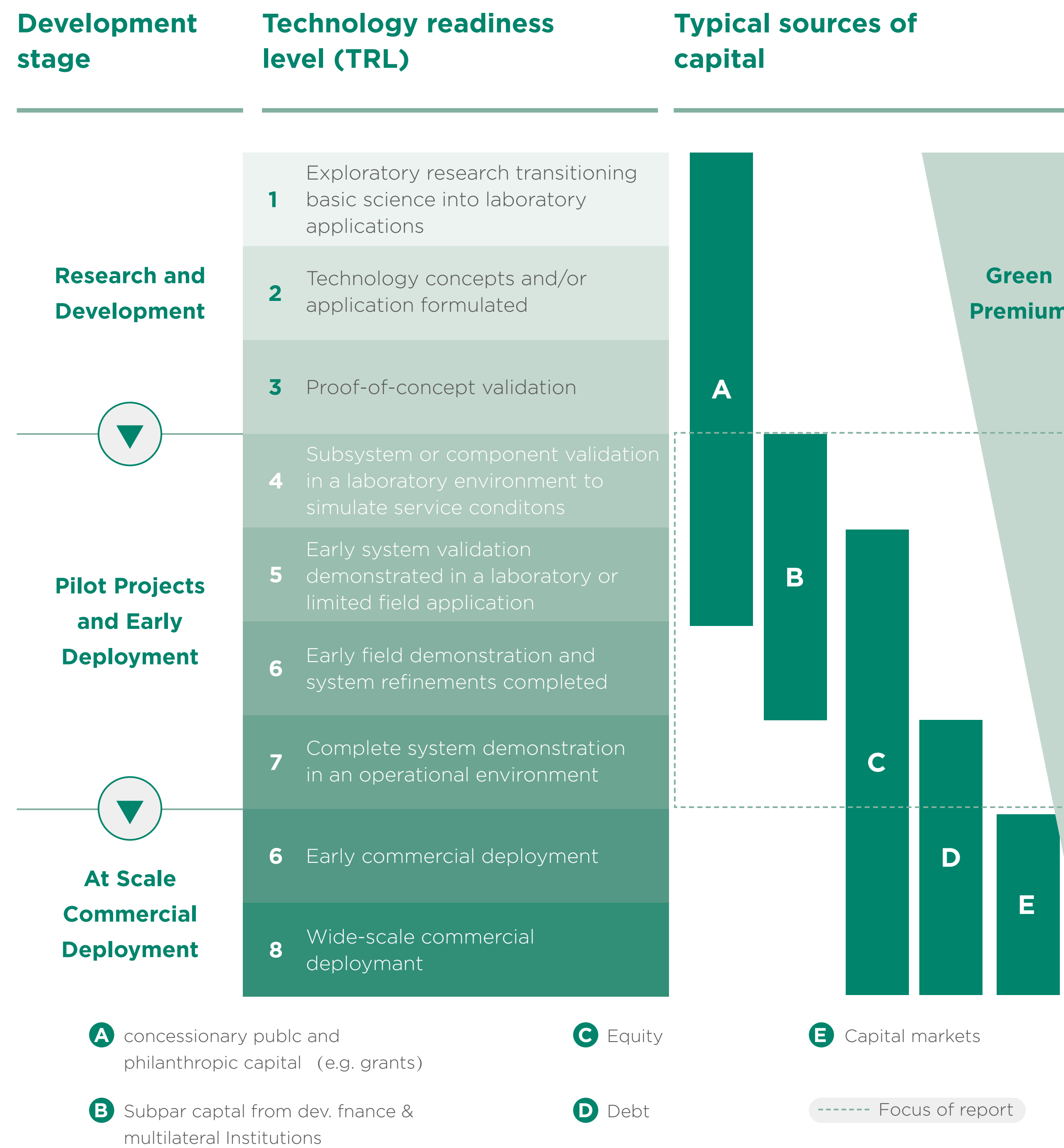
Achieving the goals of the Paris Agreement will require significant financial support, mostly coming from the private sector. Although green and sustainable finance has gained good momentum in recent years, the financial resources mobilized are not enough to meet the global transition demand. It is estimated that nearly 100 trillion USD of investment is needed globally to meet the Paris Agreement targets, with a financing gap of more than 2.5 trillion USD each year in developing countries.[25] Transition finance emerged from this context and is calling for greater attention and participation globally.

Transition finance can be understood as financing services intended for economic activities that are currently still carbon-intensive, do not have a viable green substitute or are not ready for mass-market adoption, but are crucial for socio-economic development and have a clear and credible pathway of decarbonization. For emerging markets, transition finance is in urgent need, as it would be able to help accelerate low-carbon transition without compromising national economic growth and social inclusiveness.

There are incremental awareness and actions on developing transition finance policies and financial instruments globally. In recent years, new transition-related financial tools, such as transition bonds, sustainability bonds, sustainability-linked bonds and sustainability-linked loans, have received growing market interest. Unlike green financial products, the use of proceeds from these new types of financial tools does not necessarily flow to eligible green activities. Instead, transition financial tools require predefined transition performance targets that are associated with the cost of financing, aligning ambitions and activities with the UN Sustainable Development Goals.

The World Economic Forum report on Financing Net Zero Framework addressed that a suite of financial instruments will be needed, to facilitate the advancement of new zero-carbon technologies that will ultimately help realize transition goals. Meanwhile, such technologies also experience new unmitigated risks and near-term competitive disadvantages, as reflected in their higher costs compared to current "brown" technologies. As demonstrated in the graphic below, it will require the participation of diverse financial market players, public and private, and the provision of different financial support throughout the lifecycle[26].

[25] https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/mobilising-institutional-investors-financing-sustainable-development.htm
[26] Financing the Transition to a Net-Zero Future, World Economic Forum



Source: World Economic Forum and Oliver Wyman; adapted from National Academies of Sciences, Engineering and Medicine, The Power of Change: Innovation for Development and Deployment of Increasingly Clean Electric Power Technologies, National Academies Press, 2016.

This chapter collects and analyzes a variety of transition financial products in the global market across four high-emitting sectors: Energy, Construction & Materials, Agricultural and Steel. It aims to provide an overview of the current transition finance markets but also shares leading practices to inspire innovation on transition financial tools and actions in the future.

Energy

Despite the geopolitical and energy crises, global investment in the low-carbon energy transition surpassed 1.1 trillion USD in 2022 – a new record and a significant acceleration from the previous year. For the first time, investment in clean energy technologies has achieved a balance with capital deployed in support of fossil fuel supply.[27] In late 2021, China announced that it would halt new investments in overseas coal-fired power plants.[28] This move is expected to drive Chinese investors to replace coal projects with green investments, particularly renewables, gas-fired power plants, and CCUS, along the Belt and Road regions.

Energy transitions in both emerging and advanced economies are similar in terms of their reliance on certain technologies, market forces, and government regulations that stimulate the transition. However, transitions in emerging economies face unique challenges due to their vast demands for economic growth and infrastructure development. Additionally, the institutional and market context, as well as the preconditions for investment in emerging economies, vary substantially and are much different from those in developed economies.

Some research indicates that the power sector in emerging economies has the potential to make far more progress than other carbon-intensive sectors like transportation, industry, and buildings, concurrent with the increasing understanding and adoption of renewable energies. Successful energy transitions in emerging markets rely on the cost and speed of adoption of low-carbon solutions and technology innovations. Finance is needed to make prices more competitive.

On top of financing in clean energy and technology, transition finance is prominent in support the phase-out and decarbonization of fossil fuels in power generation. Transition finance tools, such as sustainability-bonds/loans (SLB, SLL) and transition bonds, are commonly used in energy transition. Unlike green bond and loan, sustainability-linked products don't have limitations on the use of proceeds. Instead, they are linked with specific targets set by the fundraisers that are consistent with the Paris Agreement. On one hand, the deployment of transition finance tools allows much needed investments to flow to 'brown' industries and companies. On the other hand, the use of transition finance instruments requires science-based, ambitious and viable target-setting and strategy. This has increasingly become the dominant challenge in financing energy transition and is susceptible to the risk of "transition-washing".

[27] https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/
[28] https://www.weforum.org/agenda/2021/10/china-set-to-remove-overseas-coal-power-funding-but-will-it-invest-in-renewable-energy-instead/

Case 18
China Construction Bank - Sustainability-linked Bond to Support Renewable Energy

1. Transaction Summary

Deal Size: **1** billion RMB

Product Type: Sustainability-Linked Bond

Tenor: 3 years

On May 6,2021, China Yangtze Power Co., Ltd. ("Issuer") successfully issued a 1 billion RMB medium-term note (sustainability linked) with a maturity of 3 years, and an issue interest rate of 3.40%. The issuer had selected renewable energy management capacity as the linked indicators to issue this (sustainability-linked bond, effectively used the bond market to help achieve its sustainable development strategy.

2. Client Overview

The issuer is China's largest listed electric power company and the world's largest listed hydropower company, mainly participates in hydropower generation, clean energy and smart integrated energy, power distribution, investment and financing business, and has carried out related business in China, Peru, Brazil, Pakistan and other countries. The issuer now owns all the power generation assets of the four power stations of the main stream of Yangtze River.

3. Deal Highlights

This sustainability-linked medium term note is the first batch of sustainability-linked bonds in China, giving full play to the key role of the bond market in helping and encouraging sustainable development, and fully demonstrating the determination and ambition of Chinese enterprises to implement sustainable development. The bond aims to increase the installed capacity of renewable energy by at least 71 million kilowatts by the end of 2023 and a 45% growth compared to the installed capacity in Sep 2020. The bond thus uses installed capacity as an indicator to adjust coupon rate. Failure to meet the above targets will result in a 25 basis point increase in the coupon rate for the third interest-bearing year of the bond from the initial coupon rate.

4. Adoption of GIP

Principle 1
Embedding sustainability into corporate governance

Principle 3
Disclosing environmental information.

Principle 4
Enhancing communication with stakeholders.

Principle 5
Utilizing green financial instruments.

5. Analysis

The bond in this case is part of the first batch of sustainability-linked bonds in China underwritten by CCB. They provide direct financing support low-carbon transition of traditional high-emitting industries and the development of renewable energy. This bond was one of the first attempts to combine transition emission reduction targets with financing interest rates, leading a good example of innovating transition financial tools (GIP Principle 5). In addition, this batch of SLL has also brought social benefits. For example, the funds raised by bonds can be used as equity to acquire the ownership and operation rights of new energy projects to help the construction of beautiful villages and increase farmers' employment and income.

Case 19
Bank of China - Sustainability Re-linked Bond

1. Transaction Summary

Deal Size: **300** million USD

Product Type: Re-linked Bond

Tenor: 3 years

On October 27, 2021, Bank of China successfully completed the pricing of 300 million USD sustainable development re-linked bonds. The bond was issued by Bank of China London Branch with a maturity of three years and raised funds to support sustainability-linked loans in the tourism, funds, trading, manufacturing and warehousing sectors. The successful issuance of the world's first sustainable development re-linked bond is an important innovative practice of Bank of China to enrich the ESG financial product system and promote the sustainable development of the real economy.

2. Client Overview

The net proceeds of the bond will be used to finance or refinance five borrowers in its Eligible SLL Portfolio. These borrowers belong to different industries: the manufacturing industry in the UK, the fund management industry in the US, the travel industry in the US and UK, the trade industry in Hong Kong, and the storage industry in Singapore. The selection of borrowers is based on their GHG emission level, ESG performance score, CO2 emission rate, the increase in the percentage of a certain food volume traded by the borrower traceable to the specific farm, and the increase in the percentage of a certain food volume traded by the borrower with social and environmental assessments out of the total traded volume traceable to the specific farm. The imported services and goods contributed to the building of a local power plant and LNG power production, which will ultimately replace the use of diesel power and reduce flaring which is rife in the region.

3. Deal Highlights

Sustainability-relinked bonds refer to bonds that raise funds to support sustainability-linked loans, and the coupon rate is indirectly linked to the degree to which the ESG performance targets of the underlying loan are achieved and adjusted accordingly with the fluctuation of the loan interest rate. Unlike green loans, sustainability-linked loans are not limited to specific projects. The higher the degree to which the performance target is achieved, the higher the loan interest rate can be reduced, and vice versa, generally requiring third-party independent certification.

The fund raised by this re-linked bond supports five sustainability-linked loans issued by the BOC. The underlying loan portfolio may be adjusted over the life of the bond to respond to investor demand. During the bond marketing period, investor demand reached 700 million USD – 2.3 times the size of bond issuance, with more than 90% of investors being banking institutions in the Asia-Pacific region.

The sustainability relinked bond won the International Financial Law Review's (IFLR) 2022 Asia Pacific Deal of the Year Awards and The Asset's 2021 Sustainable Capital Markets "Best Sustainable Relinked Bond" award.

4. Adoption of GIP

Principle 4 Enhancing communication with stakeholders.

Principle 5 Utilizing green financial instruments.

5. Analysis

This innovative product further broadens the financing channels for sustainability-related investment and combines the bond and loan markets. While providing bond investors with risk-controlled opportunities to participate in sustainability-linked loans, it also encourages borrowers to pay attention to and continuously improve their ESG performance such as carbon emission reduction. The product innovation is in line with the overall spirit of GIP Principle 5: Make the most of green financial products.

Compared with general sustainability-linked bonds, BOC's re-linked bonds have two significant differences. First, the purpose of the raised funds. Generally, there are no specific restrictions on the use of funds raised by sustainability-linked bonds, and the scope of capital flow is relatively broad. However, all proceeds from this bond will be earmarked to support eligible sustainability-linked loans specifically, thus the flow of funds will be clear. Second, the bond adds a "preferential interest rate" clause. Typically, sustainability-linked bonds only contain a "step-up" clause, i.e., interest rates will be raised when borrowers fail to meet preset sustainability performance indicators. On this basis, BOC re-linked bonds have added a "preferential interest rate" clause, that is, when the borrower exceeds the preset target, the interest rate will be reduced accordingly. This setup provides greater impetus for lenders to achieve the low-carbon transition and sustainability goals.

Case 20
CACIB - Transition Bond to Support Low-Carbon Transition in Energy Sector

1. Transaction Summary

Deal Size: **300** million USD

Tenor: 10 years

Product Type: Transition Bond

Closing Date: February 2021

Proceeds are used to finance or refinance, in whole or in part, construction of a second additional gas-fire power generation unit using a combined cycle gas turbine ("CCGT") within the Guarantor's Black Point Power Station in Hong Kong, and so as to constitute Energy Transition Bonds as described in the CLP's Climate Action Finance Framework ("CAFF"). The Framework has been updated to reflect the increased climate related commitments made by CLP in its updated Climate Vision 2050, published in December 2019.

Use of Proceeds are updated to include "associated enabling infrastructure" for Energy Transition Finance Transactions as well as for the New Energy Bonds. The CAFF was also expanded to consider different forms of financing, such as loans. Crédit Agricole CIB acted as a Joint Lead Manager and Joint Bookrunner on this transaction. The second party opinion is provided by DNV.

2. Client Overview

Castle Peak Power Company Ltd. (CAPCO) is a joint venture of CLP Power Hong Kong Ltd. (CLP Power) and China Southern Power Grid International (HK) Co., Ltd., a wholly owned subsidiary of China Southern Power Grid Co. Ltd., under a 70/30 partnership. CAPCO currently owns three power stations, Castle Peak Power Station, Black Point Power Station and Penny's Bay Power Station, which are all operated by CLP Power. Its wholly-owned subsidiary Castle Peak Power Finance Company Limited is incorporated with limited liability under the laws of the British Virgin Islands.

CAPCO operates electricity supply businesses and the Company generates, transmits, and distributes electric energy and other products. To ensure a stable supply for the electricity users in Hong Kong, CAPCO acts as the sole electricity supplier to CLP and provides electricity to 2.64m customers (approximately 80% of the total HK population), which demonstrates its strategic importance to the Hong Kong power industry.

In 2017, CAPCO imprinted its name in bond issuance history, issuing the first ever Transition Bond globally to refinance the company's new gas power plants project. The remarkable milestone proved momentous, allowing for a successful USD 350m Energy Transition Bond in 2019. Maintaining pace and ambition to achieve the Climate Vision 2050 of the Group, this offering represents CAPCO's third Energy Transition Bond.

3. Deal Highlights

This transaction marks the issuance of CLP's 3rd Energy Transition Bond through its Climate Action Finance Framework (CAFF), building upon the success of its 1st and 2nd global energy transition bonds issued in July 2017 and June 2020.

The proceeds from the Bond will be used to finance the construction of a new combined cycle gas turbine (CCGT) unit at Black Point Power Station in Hong Kong, following the commissioning of CAPCO's first CCGT unit in 2020. This will allow the company to purchase gas directly from more diversified sources for its gas-fired electricity generation facilities, including two new CCGT units being developed at Black Point Power Station, to significantly replace the existing coal-fired generation units in the CAPCO supply area.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 4 Enhancing communication with stakeholders.

Principle 5 Utilizing green financial instruments.

5. Analysis

Transition bonds offer a financing alternative for high carbon sectors such as the electrical industry to transition away from fossil fuels. It also bridges the gap between traditional and sustainable financing as businesses begin the transition to carbon neutrality.

Despite receiving a lot of attention and testing on both a national and international level, transition finance still confronts several difficulties, particularly when it comes to managing investor expectations. Investors have clearly expressed their requirements on transition finance, in which transition activities must demonstrate sufficient ambition to avoid greenwashing.

To be credible, the transition frameworks and standards should be science-based and supported by specific performance indicators and tools to track the progress of transition activities. Issuers should also disclose the committed or expected environmental benefits and a long-term decarbonization strategy to articulate their sustainability credentials before launching any sustainability-linked instruments. To provide investors with some assurance, CAPCO has engaged an appropriate external assurance provider to independently assure the contents of its Climate Action Finance Report as appropriate.

Construction and Materials

It's estimated that 39% of global energy and process-related carbon emissions comes from built architectures, of which about 11% is embodied carbon emissions from the manufacturing of building materials (such as cement, steel and glass) and the rest comes from operational emissions like heating, cooling and power.[29] As the rapid urbanization and economic development continues to spur infrastructure demands in the BRI region, greening the value chain of construction is essential to the region's successful carbon reductions. This would require minimizing carbon emissions from the building material manufacturing as well as renovating existing buildings.

Some investment needs have been identified. For example, on material manufacturing, large scale investments are needed in breakthrough technologies, including the electrification of kilns, carbon capture and storage technologies and novel cement. Moreover, existing and new buildings need investments to shift to alternative clean energy sources and improve energy efficiency largely. Yet, split incentives, risk related barriers, capital expenditure and initial capital cost can impede the widespread adoption of financing for green buildings.

Case 21
Standard Chartered Bank - First "Transition Trade" Finance Facility for Cement Manufacturer in the Middle East

1. Transaction Summary

Product Type: Standby Letter of Credit

Underlying goods will be used in sourcing and installation of a waste heat recovery solution

2. Client Overview

The client is one of the largest cement producers in the UAE and a wholly-owned subsidiary of Holcim Group. The group operates four business segments including cement, aggregates, ready-mix concrete and other products. The Company group announced their 2050 pathway where they have set their net zero targets for 2030 and 2050 as validated by SBTi, cutting across the value chain.

[29] https://www.unep.org/resources/publication/2019-global-status-report-buildings-and-construction-sector

3. Deal Highlights

This SBLC facilitates the installation of a waste heat recovery unit at the borrower's cement plant, enabling the generation of electricity from waste heat. This innovative solution will result in a substantial 40% reduction in electricity costs and improved operational efficiency. The waste heat recovery system is being provided by a leading global company specializing in electricity, natural gas, and energy services. Notably, the leading company is committed to achieving net zero carbon emissions by 2045, aligning with sustainability goals. Furthermore, this project represents a significant milestone as the first waste heat recovery initiative in the UAE to utilize Organic Rankine Cycle (ORC) technology.

4. Adoption of GIP

- **Principle 1** Embedding sustainability into corporate governance
- **Principle 4** Enhancing communication with stakeholders.
- **Principle 5** Utilizing green financial instruments.

5. Analysis

This transaction marks the market-first transition trade finance facility. It qualifies as part of Standard Chartered Bank's transition finance as the use of proceeds associated with the financing falls within the bank's transition finance framework. In addition, the activity is linked to the client's overall transition and emissions reduction strategy.

Case 22
CACIB - Sustainability-Linked Loan to Reduce Data Center Carbon Footprint

1. Transaction Summary

- Deal Size: **2.1** billion AUD
- Product Type: Sustainability-Linked Loan
- Tenor: 3.5 years
- Closing Date: September 2021

Crédit Agricole CIB acted as a Joint Sustainability Structuring Advisor on this transaction.

2. Client Overview

AirTrunk is a best-in-class hyperscale data center specialist creating a platform for cloud, content and large enterprise customers across the Asia-Pacific region. The company develops and operates data center campuses with industry leading reliability, technology innovation and energy efficiency. AirTrunk's unique capabilities, designs and construction methodologies allow it to provide customers with a scalable and sustainable data center solution at a significantly lower build and operating cost than the market.

3. Deal Highlights

In September 2021, Australian company AirTrunk converted its existing circa 2.1 billion AUD (equivalent) loan facilities into a Sustainability Linked-Loan (SLL) by linking its loan margin to sustainability goals.

AirTrunk established its SLL KPIs across 3 key areas being: (1) energy efficiency; (2) carbon neutrality; and (3) diversity and inclusion.

To enhance the Company's commitment to transparency and governance, the KPIs will be independently assured.

The transaction is the largest SLL globally across the Data Center ("DC") industry, the first SLL by a DC operator in the Asia-Pacific region, and the second-largest SLL completed in Australia by any company in any sector.

4. Adoption of GIP

- **Principle 3** Disclosing environmental information
- **Principle 4** Enhancing communication with stakeholders.
- **Principle 5** Utilizing green financial instruments.
- **Principle 7** Adopting green supply chain management

5. Analysis

AirTrunk's SLL is the first SLL or green loan / bond financing globally to utilize Operating PUE (as opposed to simply Design PUE, which has attracted most green loans/ bonds in the past) as a KPI to measure and report on the true efficiency of company operations. This innovative KPI demonstrates AirTrunk's commitment to sustainability in digital infrastructure and holds the Company accountable to deliver towards its industry-low Design PUE. It also sets a new industry benchmark in DC Sustainable Financing.

Agriculture

The agriculture sector is responsible for about 8.5% of GHG emissions globally, mainly from the release of nitrous oxide from agricultural soils and methane from livestock and manures.[30] The twin crises of climate change and biodiversity loss, alongside the economic pressures of increasing input prices for farmers, is calling for the transition of a more green, sustainable agriculture and agri-food sector.

The BRI region holds a leading position in global agriculture production. The future potential for food production growth mostly lies in Russia, Central Asia, Central and Eastern Europe, Southeast Asia, and Africa. However, for most of these countries, agricultural investment remains strikingly low, particularly compared to the sector's share of GDP and the financial infrastructure is underdeveloped, in terms of accessibility, affordability and availability. What's more, other constraints on the decarbonizing agriculture sector include: lack of infrastructure (electricity, roads and water supply), limited technology knowledge, dependance on traditional farming practices, limited market access and insufficient policy and regulation frameworks.

Financing for a transitioning agriculture sector could focus on 1) investing in innovative solutions in managing farms and the industrial food system, such as satellite and spatial data and blockchain; 2) Investing directly to farmers for on-farm reduction and sequestration schemes, which can reduce their scope 3 emissions verifiably.

[30] https://ahdb.org.uk/carbon

Case 23
DBS - First Sustainability-Linked Bond in the Agri-Food Industry

1. Transaction Summary

- Deal Size: **350** million USD
- Product Type: Sustainability-Linked Loan
- Tenor: 3.5 years
- Closing Date: September 2021

DBS supported JAPFA in issuing a Senior Fixed Rate Sustainability-Linked Bond (SLB) of 350 million US dollars with a coupon of 5.375 % per annum, has a term of 5 years and will mature in 2026.

2. Client Overview

Japfa Ltd. (Japfa) is a prominent and vertically integrated company that specializes in the production of various animal proteins, dairy products, and consumer food items. With operations in Indonesia (the second largest market), Vietnam, Myanmar, India, and China, Japfa has established itself as a leading player in the industry.

Japfa Group aims to contribute towards the UN SDG 2 by producing nutritious, safe and affordable staple protein foods through an Efficient Production System (one of the Group's three sustainability pillars) that, in turn, can be achieved by ensuring, among others, the efficient use of resources and waste utilization.

3. Deal Highlights

This SLB is listed on the Singapore Stock Exchange (SGX) and is the first environmentally friendly US dollar denominated bond in the agri-food industry, also the first from Southeast Asia. The net proceeds of the issue will be used to repay the existing 250 million USD notes due 2022 and for general corporate purposes, including but not limited to capex, working capital and debt refinancing.

The SLB prioritizes an environmental KPI that is linked to the achievement of a Sustainability Performance Target ("SPT") to utilize the impact related to water pollution from untreated wastewater by reducing eutrophication potential through the management, treatment and/or recycling and utilization of wastewater and, ultimately, improve water circularity and reduce water withdrawal. The SPT is that, over the next 3 years and 9 months from the date of the SLB issuance, PT Japfa Tbk will construct: 8 water recycling facilities (out of 15 slaughterhouses) under its poultry operations and 1 water recycling facility at a hatchery within the poultry breeding unit.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 3 Disclosing environmental information

Principle 4 Enhancing communication with stakeholders.

Principle 5 Utilizing green financial instruments.

5. Analysis

This deal represents a transition financing breakthrough in the argi-food sector and in Southeast Asia. It shares some unique characteristics:

First, it was the first environmentally friendly dollar bond in the sector and the region, other than being issued in the local currencies, thus able to command wider investment participation and a larger market.

Second, the objectives and transition performance KPIs of this bond were set through science-based methods. The objectives of the deal—contributing to the company's water management and wastewater treatment—was identified by a Life Cycle Assessment, which provided a comprehensive understanding of the impacts of the company's activities and products while identifying opportunities to improve the environmental performance of products' life cycle. In addition, a Second Party Opinion from a global leader in ESG assessment confirmed the relevancy and ambitiousness of the Sustainability Performance Targets, which are associated directly with the coupon rate. The bond will also seek verification on the performance against the KPIs by a qualified external verifier at least once a year and will disclose the progress on the KPI and SPT in its annual Sustainability Report, which will be posted on its website.

Steel

Steel is an essential ingredient for many industries, including construction and transportation. According to the IEA, the sector currently accounts for about 8% of global final energy demand and 7% of CO2 emissions from the energy sector[31], equal to global aviation, shipping and chemical emissions combined. Moreover, its global demand is expected to increase by more than a third by midcentury, and without measures to reduce steel demand and overhaul production, CO2 emissions are projected to rise 7% by 2050 despite increased secondary production. The BRI countries and regions are major producing countries, in particular, those in Asia: India was the second largest producer in crude steel production in 2021 after China. Meanwhile, Russia, Ukraine and other CIS accounted for 5.4% and the other Asia countries 8.1% in the total share of crude steel production globally[32].

To achieve climate goals, decarbonizing existing infrastructure will be the heavy lifting part, particularly in the emerging economies which host 85% of the total production capacity now. Moreover, production capacity for crude steel has more than doubled in the past two decades globally. This rapid expansion has resulted in the prevalence of rather young facilities - with an average age of around 13 years, which is less than a third of their typical lifetime. If these facilities follow the predicted business model that they were built to fulfill, they will surely continue to emit a significant amount of GHG gasses, whereas abrupt early retirement will definitely generate huge financial losses.

Challenges remain, despite the increasing demand for green and low-carbon steel from downstream manufacturers as well as the downward trend in total demand for steel. One of the challenges to decarbonize the steel sector is the "green premium" of low-carbon steel, combined with the risks, high upfront costs of new low-carbon technologies and long payback periods, which is similar across other heavy industry sectors that face high costs and risks to decarbonize their operations. Moreover, formulating the decarbonization pathway and monitoring performances can also require technical expertise and additional resources. Such barriers may even be harder to overcome in developing countries that have less access to affordable capital and inadequate in-house capacity.

[31]https://www.iea.org/reports/iron-and-steel-technology-roadmap
[32]https://www.statista.com/statistics/267263/world-crude-steel-production-by-region/

Case 24
Credit Sussie et al- First Sustainability-Linked Bond in the Steel Sector

1. Transaction Summary

Deal Size: **500** million USD

Product Type: Sustainability-Linked Bond

Tenor: 10.5 years

Credit Suisse, Deutsche Bank, Standard Chartered Bank, Axis Bank, BNP PARIBAS, Mizuho Securities, MUFG, and State Bank of India, London Branch as underwriters in connection with an overseas bond issuance by JSW Steel Limited ("JSW Steel"), a leading Indian steel maker. The coupon rate of this SLB is 5.05%. The proceeds of the issue will be used by the Company for funding CAPEX plans as well as for refinancing of debt.

2. Client Overview

JSW Steel is one of India's leading integrated steel manufacturers with a capacity of 18 MTPA. It is one of the fastest growing companies in India with a footprint in over 100 countries. JSW offers a wide gamut of steel products that includes Hot Rolled, Cold Rolled, Bare & Pre-painted Galvanized & Galvalume®, TMT Rebars, Wire Rods and Special Steel. By the end of next decade, JSW Steel aims to produce 40 million tons of steel annually.

3. Deal Highlights

This is a US-dollar denominated sustainability-linked bond and marks the first such issuance in the global steel sector. Under the sale's terms, JSW Steel will reduce its carbon monoxide emission levels by 23%, compared to its 2020 levels, by March 2030.

JSW Steel has chosen to measure performance against the Sustainability Performance Target (SPT) through one Key Performance Indicator (KPI), CO2 emissions intensity, calculated as tons CO2 per ton of crude steel produced (tCO2/tcs) covering its Scope 1 and Scope 2 emissions from the three integrated steel plants (JSW Steel Vijayanagar Works, JSW Steel Dolvi Works, and JSW Steel Salem Works, together covering 100% of JSW Steel's crude steel production) in India.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 3 Disclosing environmental information

Principle 4 Enhancing communication with stakeholders

Principle 5 Utilizing green financial instruments

5. Analysis

The SLB structure helped the Company attract ESG focused funds thereby giving it a size and price benefit. The SLB is a win-win for both issuers as well as investors-- it benefits investors by giving them an avenue to invest in socially responsible firms while offering the right incentive structure to companies to improve their ESG performance and diversify their resource base for long term financing. This path-breaking move by JSW is likely to set the tone for the Indian steel industry to proactively move towards reducing its CO2 emission footprint with the ultimate goal of achieving net-zero.

Other Environmental and Social Sectors

Blue Finance

Other ESG Themes

GIP Green Investment Principles

Blue Finance

Blue Finance is an emerging area in Climate Finance with increased interest from investors, financial institutions, and issuers globally. It offers tremendous opportunities and helps address pressing challenges by contributing to economic growth, improved livelihood, and the health of marine ecosystems.

The ocean economy is expected to double to 3 trillion USD by 2030, creating 40 million job opportunities, as compared to 2010.[33] Innovative financing solutions are key to enhancing ocean and coastal preservation and increasing clean water resources, and Blue Finance has a huge potential to help realize these goals. Specifically, Blue Loans and Blue Bonds are innovative financing instruments that earmark funds exclusively for ocean-friendly projects and critical clean water resources protection.

In January 2022, International Finance Corporation (IFC) has built on the Green Bond Principles and the Green Loan Principles and related resources, including the ICMA Handbook for Impact Reporting, to provide guidance on IFC's implementation of Blue Finance, aiming to provide a list of eligible use of proceeds to support private investments that would contribute to Goals 6 and 14 of the United Nations Sustainable Development Goals — "Ensure availability and sustainable management of water and sanitation for all," and "Conserve and sustainably use the oceans, seas and marine resources for sustainable development."

[33] https://www.oecd.org/futures/Policy-Note-Ocean-Economy.pdf

Case 25
Bank of China - Blue Bond Issued to Support Sewage Treatment and Offshore Wind Power

1. Transaction Summary

Deal Size: **500** million USD / **3** billion RMB

Product Type: Blue bond

Tenor: 3 years (USD-tranche)/ 2 year (RMB-tranche)

Closing Date: September 2020

On September 14, 2020, Bank of China successfully priced the first blue bond of Chinese and global commercial institutions in the international capital market, which was issued by Bank of China Paris Branch and Macau Branch of Bank of China with a three-year maturity of 500 million USD and a two-year dual-currency blue bond of 3 billion RMB.

2. Client Overview

The net proceeds of the blue bond will be used to finance borrowers working on sustainable water and wastewater management and renewable energy.

3. Deal Highlights

The proceeds from the Blue Bond issuance by Bank of China will be dedicated to supporting ocean-related projects, specifically focused on sewage treatment and offshore wind power. These projects will primarily be carried out in China, the United Kingdom, and France. The final price of the bond for the USD variety is T+90 basis points, resulting in an effective interest rate of 1.054%. The subscription multiple for this variety is 1.9 times, indicating strong interest from international investors focused on environmental, social, and governance (ESG) criteria.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments.

5. Analysis

This bond marks a significant milestone as the first blue bond issued by Chinese and global commercial institutions. Blue bonds are a specific type of green bond designed to raise funds for projects that contribute to the sustainable development of the ocean economy, often referred to as the "blue economy." The projects supported by blue bonds encompass a range of areas related to the marine environment and sustainable ocean management.

These projects include initiatives focused on marine-related renewable energy, pollution prevention and control, sustainable land and biological resource management, sustainable water resources and wastewater management, conservation of biodiversity in both terrestrial and aquatic ecosystems, and climate change adaptation measures.

The Blue Bond won The Asset's 2021 Blue Bank of the Year and Global Finance: Sustainable Financing Awards 2021 – Blue Bond Leadership Excellence Award.

Case 26
Bank of Qingdao - Syndicated Blue Loan for Clean Water Resources Protection

1. Transaction Summary

- Deal Size: **150** million USD
- Product Type: Syndicated Blue Loan
- Tenor: 3 years
- Closing Date: June 2022

According to a press release, in June 2022, IFC has arranged a landmark 150 million USD blue syndicated loan for Bank of Qingdao (BQD), marking the first ever syndicated blue finance investment by the development financial institutions (DFIs) in China. The financing package includes 40 million USD from IFC's own account and 110 million USD parallel loans from the Asian Development Bank (ADB), DEG - Deutsche Investitions- und Entwicklungsgesellschaft and the French development finance institution Proparco.

Blue loans are innovative financing instruments that earmark funds exclusively for ocean-friendly projects and critical clean water resources protection. This new investment will enable BQD to provide 450 million USD in financing for 50 blue finance projects in China by 2025. The projects will adopt the Blue Finance Framework (embedded a list of eligible use of proceeds) that BQD has developed based on global and local leading practices and its Environmental and Social Risk Management Policies for Blue Finance.

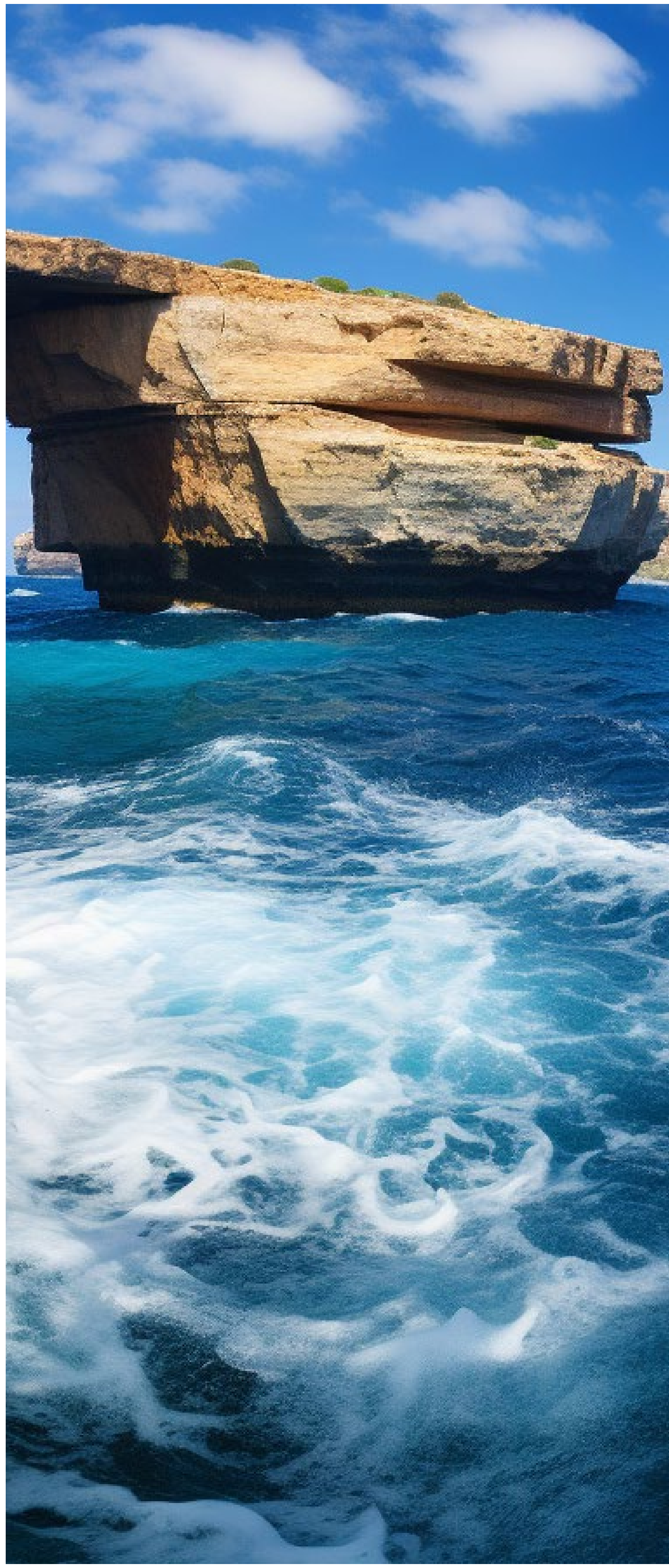
2. Client Overview

In December 2021, BQD was awarded the "2021 Global Green Finance Innovation Award" by the International Financial Forum (IFF). In May 2022, the BQD Blue Finance Project received the "Qingdao Financial Innovation Award" from the municipal government. These have demonstrated that the milestone of blue finance development of BQD has been unanimously recognized by the domestic and international community, and blue finance has become an increasingly important force that cannot be ignored and indispensable in the journey of global green finance transformation.

3. Deal Highlights

In 2021, BQD has collaborated with IFC to promote blue finance and has achieved a key milestone – formulating the BQD Blue Finance Framework, which, in particular, has piloted the standards of the use of proceeds for blue projects complied with the Green Bond Principles formulated by ICMA and Green Loan Principles by LMA, the IFC Guidelines for Blue Finance, as well as the Green Bond Endorsed Project Catalogue (2021 Edition, by PBOC, NDRC and CBIRC) and local guidelines in Shandong Province of China. The list defines 7 major sectors for blue loans/bonds, covering: clean water supply and treatment, circular economy and marine plastic pollution control, sustainable fisheries, ocean-friendly manufacturing, sustainable shipping and port logistics, marine ecosystem restoration and sustainable tourism services, and offshore renewable energy. In these sections, there are 37 specific qualifying activities, each of which has a corresponding industry standard.

BQD also conducts full-cycle Environmental and Social Risk Management (ESRM) throughout the project financing process. The bank has established an ESRM system in line with the CBIRC Green Credit Guidelines, as well as for its blue finance portfolio in line with IFC Performance Standards and leading industry practices. Furthermore, the bank applies these DFIs' Exclusion List for its blue portfolio and will not finance any activities with potential significant adverse environmental or social risks and/or impacts on marine environment.



4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

Principle 7 Building capacity through collective action

5. Analysis

Challenges & barriers being addressed

The financial sector can play a key role in turning the global economic system toward rebuilding ocean prosperity, restoring biodiversity, and restoring ocean health. It's vital to promote private sector investment and market-oriented financing instruments. In the past decade, financial markets have witnessed the rapid development of sustainable finance, as well as the emergence of various financial instruments that invest in green and social well-being, or linked to sustainable development goals. Now, global investors, financial institutions and issuers are all gaining momentum in the field of blue finance. The blue loans/bonds are expected to follow a similar trajectory of green bonds over the next few years to address the world's biggest challenges related to marine plastics, water systems, and ocean preservation. However, blue loans/bonds have not yet adopted and implemented industry standards and guidelines. The market has been seeking guidance on project eligibility criteria, translating general blue economy financing principles into guidelines for blue bond issuances and blue lending.

Innovation

The first-of-its-kind syndicated blue finance facility from 4 DFIs, taking collective action – not only in innovative financing instrument but also offering help in technical standards and capacity-building, to a Chinese regional commercial bank that serving the local economy has catalyzing a set of leading banking practices and a demonstration effect that would contribute to the global and local standard setting in blue banking, hence accelerate the blue finance growth.

The "BQD Blue Finance Framework" is a very key measure in this case to connect international and domestic knowledge and promote the implementation of blue investment. The framework has two important dimensions:

The first dimension is about "the use of proceeds". The framework clearly proposes that blue finance is an emerging sub-sector of green finance and defines 37 blue activities in 7 sectors to promote the specialization, refinement and mainstreaming of "blue assets". This has provided a broader definition of "blue loan", so as to take into account the challenges for the sustainable development of both marine systems and clean water resources (i.e., pollution control, natural environment protection, biodiversity, combating climate change). It's forward-looking and has proposed new investment opportunities in the pilot region, according to the local economies (such as biodegradable plastics, bio-based chemical fibers replacing petrochemical-based synthetic fibers, fishery traceability systems, water-friendly household products). For each specific "use of proceed", the framework also guides specific technical standards (for instance, the sustainable fisheries projects need MSC, ASC certification, water treatment projects should achieve a water saving rate of at least 20%) - which is conducive to the bank's credibility of the impact disclosure.

Another dimension is about ESG integration. When providing blue loans to BQD, the DFIs have also helped the bank to enhance capacity from the perspective of ESG risk management: firstly, establishing an environmental and social management system for blue portfolio at institutional level, and secondly, at project level, assessing and managing high-risk industries and high-risk projects financed by the bank (for example, using IFC's Performance Standards). This is an important pathway for a commercial bank to comprehensively manage environmental and social risks, and this is what all international investors look forward to seeing.

Other ESG Themes

This section presents cases that are related to ESG in a broader sense, including one catastrophe bond, one sustainable bond, and one ESG-linked derivative, which resonates with the themes of planet, people, and prosperity, while embedding principles of governance.

Case 27
Natixis - Green Cat Bond to Scale Up Green and Social Insurance Policies

1. Transaction Summary

Deal Size: **200** million USD

Product Type: Green Catastrophe Bond

Tenor: 4 years

Closing Date: June 2021

In June 2021, Generali successfully priced a 200 million EUR Catastrophe Bond. This is the first ever Green Cat Bond sponsored by an insurance company.

The Green ground-breaking features of the transaction are the following:

The investment of the collateral in assets with a positive environmental impact (EBRD Notes issued under its framework for Environmental Sustainability Bonds)

The allocation of the solvency capital released towards eligible "green assets" & inherently green forms of insurance business ("green policies" as Property & Casualty business for both retail and corporates), as defined within Generali's pre-published Green Insurance-Linked Securities framework.

Natixis acted as Sole Green Coordinator and Joint Bookrunner.

2. Client Overview

Generali is a major player in the global insurance industry – a strategic and highly important sector for the growth, development and welfare of modern societies. Over almost 200 years, Generali has built a multinational group that is present in 50 countries, with more than 400 companies and more than 70,000 employees. Generali Group aims to become the standard bearer and industry leader in the European retail insurance market.

Generali's 2021 three-year strategic plan has set specific goals that tighten the link between sustainability and Generali's core business. Generali has committed to increase premiums from social and green products by 7%-9% and allocate 4.5 billion EUR to green and sustainable investments between 2018 and 2021. In February 2018 the Board of Directors approved the Strategy on climate change. This includes specific investment and underwriting targets and identifies the involvement of Generali's stakeholders as a major tool to facilitate the transition towards a society with a low environmental impact.

3. Deal Highlights

This transaction targets both asset side (green investments) and liability side (insurance policies) making it the very first capital management & re-insurance product. Hence, leveraging from Generali's commitments to likely increase in the near future premiums from green and social insurance policies and increase its ability to tag and channel freed up capital towards "green eligible policies".

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

This structure is a concrete and innovative capital management tool for a sector that will face an escalating frequency and severity of extreme weather due to climate change. Covering both asset and liability sides captures physical risk (investments) and liability risk (insurance companies and policy holders), which are increasingly scrutinized by Regulators, especially through Climate Stress Testing as initiated by the European Insurance and Occupational Pensions Authority (EIOPA).

Case 28
Natixis - BOAD's Inaugural Sustainable Bond

1. Transaction Summary

Deal Size: **750** million EUR

Product Type: Sustainable Bond

Tenor: 12 years

Closing Date: January 2021

In January 2021, Banque Ouest Africaine de Développement, an African multilateral development bank, issued its 12-year inaugural EUR sustainable bond offering in the RegS/144A market totaling 750 million EUR at 2.843%.

The proceeds will be used to finance eligible Green & Social projects and Pandemic response initiatives.

The Framework defining the eligible categories in which the proceeds will be invested has been verified by the independent verifier Vigeo Eiris, which gives the insurance that the sustainable framework is aligned with the Green Bond Principles and the Social Bond.

Natixis acted as Joint Bookrunner and Sole Structuring Advisor of Sustainable Framework with key development projects including social infrastructure, climate initiatives and poverty-relief efforts.

2. Client Overview

Banque Ouest Africaine de Developpement is the common development finance institution of the Member States of the West African Monetary Union, established through an Agreement signed in November 1973. The West African Economic and Monetary Union (WAEMU) Member States include Benin, Burkina, Ivory Coast, Guinea Bissau, Mali, Niger, Senegal, and Togo.

BOAD's main mission is to constantly improve the socio-economic and living conditions of the populations in the Union, notably through wealth and job creation. The Bank has taken the initiative of engaging in a formalized Corporate Social Responsibility approach since 2018, with the ambition of creating sustainable value for the entire sub-region and has set up a CSR Policy.

Its new Strategic Plan for 2021-2025 comprises three operational axes: strengthening regional integration, contributing to the creation of value and productive jobs in support of States and the private sector, and strengthening resilience to climate change.

3. Deal Highlights

In line with BOAD's broad mandate to financing priority development projects, the Framework combines a large scope of projects falling under 26 sub-categories of eligible categories (13 social & 13 green) leveraging from granular suitable criteria aiming to be aligned with best market practices but also localized with the region's features & specificities.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

This Sustainability Bond Framework is "overarching" and will pave the way for future bond issuances in various formats: Green Bonds, Social Bonds & Sustainability Bonds.

Innovative Geospatial eligibility criteria have been included for some Eligible Social Projects (i.e. development of electricity transmission & distribution infrastructure when less than 50% of the population has access to electricity or development of rural and feeder roads, and Public transport for rural population living at more than 2 km away from an all season road) in order to ensure that those expenditures are directed towards areas where the social objectives gaps are the greatest. These geospatial criteria rely on WAEMU's poverty mapping analysis that are conducted by the Statistical Institutes in each WAEMU country.

Case 29
Standard Chartered Bank - ESG-linked derivative

1. Transaction Summary

Deal Size: **2.45** billion MYR

Product Type: ESG-linked Interest Rate Swap

Standard Chartered Bank has executed the world's first Malaysian Ringgit denominated ESG-linked derivative transaction and Asia's largest ESG-linked derivative trade to date with CIMB in the financial services sector for a notional of 2.45 billion MYR.

2. Client Overview

CIMB Group is a leading focused ASEAN bank and one of the region's foremost corporate advisors. It is also a world leader in Islamic finance. The Group is headquartered in Kuala Lumpur, Malaysia, and offers consumer banking, commercial banking, investment banking, Islamic banking and asset management products and services. It is the fifth largest banking group by assets in ASEAN and, as at the end of December 2022.

Sustainability is one of the strategic themes of CIMB FORWARD23+ strategy. CIMB committed, in intent and by design, to demonstrating sustainability leadership while balancing growth with responsibility. As a leading focused ASEAN bank, CIMB aim to integrate environmental, economic, and social (EES) considerations into all aspects of their business. CIMB also invests resources and works with their stakeholders to create net positive impact on society and environment.

3. Deal Highlights

Standard Chartered Bank has executed the world's first Malaysian Ringgit denominated ESG-linked derivative transaction and Asia's largest ESG-linked derivative trade to date with a client in the financial services sector for a notional of 2.45 billion MYR (~600 million USD).

The ESG overlay of this Interest Rate Swap has been structured around two key performance indices (KPIs) that reinforce recently announced sustainability commitments made by CIMB Group. The client will benefit from better pricing upon meeting agreed ESG KPIs and will entail a symmetrical penalty otherwise (i.e. if they do not meet the targets).

This folds nicely into CIMB banking group's commitment towards achieving its commitments to mobilizing 30 billion MYR in sustainable financing by 2024, achieving net zero Scope 1 and 2 GHG emissions by 2030 and net zero GHG emissions by 2050.

ESG Structure: The two KPIs included are (1) CIMB Group's percentile ranking for banks based on the S&P Global Corporate Sustainability Assessment in support of the Group's aspiration to be listed as an industry leader on Dow Jones Sustainability Index ("DJSI"), and (2) Reductions in Scope 1 and 2 greenhouse gas ("GHG") emissions in line with the Group's Net Zero ambitions. The SPTs agreed are material, ambitious, objective, measurable and verifiable by independent sources.

Standard Chartered Bank subsequently helped price another bond trade for CIMB (500 million USD 2.125% 144A/Reg S Senior Unsecured Sustainable Development Goals Notes due 2027), where Standard Chartered Bank continued to play a unique role as ESG coordinator in this transaction and successfully offered a KPI-linked structure on the USD interest rate swap on that bond as well.

4. Adoption of GIP

Principle 1 Embedding sustainability into corporate governance

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 5 Utilizing green financial instruments

5. Analysis

Problem addressed: This instrument helps execute innovative treasury and derivative transactions with ESG-related pricing components or utilization of proceeds going forward. It had also been active in offering loan or financing products and sustainable or sustainability-linked bonds or sukuk.

Innovation: This was the world's first Malaysian Ringgit denominated ESG-linked derivative transaction and Asia's largest ESG-linked derivative trade as of the writing of this casebook. Through the trade, the client not only applied an ESG overlay demonstrating CIMB's commitments to ESG, but also CIMB would benefit from better pricing upon meeting agreed 2 ESG KPIs on reductions in Scope 1 & 2 GHG emissions and being listed on the DJSI (or incur a symmetrical penalty otherwise). The transaction sets a precedent for more innovative treasury and derivative transactions with ESG-related pricing components or utilization of proceeds, such as swaps, forwards and options involving cross currency, interest rate, commodity, or foreign exchange transactions.

Case 30
Ninety One - Filling the Funding Gap for the Upgrade of Beitbridge Border Post in Zimbabwe

1. Transaction Summary

Closing Date: November 2020: Nov 2020

Deal Size: USD **43.7**M (286M total)

Product Type: Senior and Junior Debt

The Emerging Africa Infrastructure Fund (EAIF) is managed by and fully integrated into Ninety One's African investment platform. Ninety One manages the entire process on behalf of the EAIF.

2. Background and Challenge

Beitbridge is one of the busiest border posts on the African continent, lying on the critical north-south corridor. The biggest challenge that the border faces is the issue of severe traffic delays, for both passenger vehicles and trucks. The outdated systems and ageing infrastructure were unable to cope with the huge rise in traffic numbers and increase in cross-border trade. Thus, Zimbabwe's government has granted a concession to the private company, Zimborders, to completely regenerate the entire border post and manage the facility for 17.5 years.

The project experienced a critical funding gap. Besides EAIF providing long term senior debt alongside commercial banks, the transaction also required a junior debt tranche.

Zimbabwe is a challenging jurisdiction from an economic and lending perspective.

3. Transaction Highlights

EAIF acted as both senior and junior facility lender in the transaction. The junior facility bridged a critical funding gap between the senior facility and shareholder equity. This eased the pressure on the project cash flows because EAIF provided a longer tenor.

The presence of EAIF in the financing resulted in greater emphasis being placed on a robust Human Rights due diligence and reporting framework.

The transaction was conservatively structured to manage some of the FX and traffic risks, by having offshore revenue collection accounts and US$ based payment systems.

4. Adoption of GIP

Principle 2 Understanding Environmental, Social and Governance Risks

Principle 4 Enhancing communication with stakeholders

Principle 5 Utilizing green financial instruments

Principle 7 Building capacity through collective action

5. Analysis

Development Impact of the project is quite broad – from improving revenue collection systems and reporting to increasing logistics efficiency in the SADC region. Ownership of some of the new infrastructure will eventually be transferred to the town of Beitbridge, including housing, water distribution, a reservoir, sewerage pipes and treatment plant and the fire station, enhancing the town's attractiveness as an investment location. This transaction is also expected to encourage and mobilize FDI into Zimbabwe.

At the peak of the construction phase of the project around 350 mainly local people will be employed. 75 new permanent jobs will be created when the facility is commissioned. 35% of current staff are women. A dedicated plan to address the risk of Gender Based Violence and Harassment (GBVH) is in place, with a focus on women traders and migrants. This resulted in an increased number of women employed at the border post and additional monitoring measures. The borrower has committed to empower local women during the operation period of the project through a targeted recruitment drive and additional safeguarding measures.

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GIP Green Investment Principles